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THESIS

AN ANALYSIS OF THE EFFECT OF PERSONNEL TURBULENCE ON THE PERFORMANCE OF OPERATIONAL UNITS

by

Wayne Ronald Reeves

December 1982

Thesis Advisor: Richard S. Elster

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The purpose of this thesis is to analyze the effect of personnel turnover on the performance of operational Navy units. The Survival Tracking File developed by NPRDC is utilized to determine the rate of turnover aboard a sample of 40 ships. Descriptive data such as length-of-service, years of education, age, etc., are selected to provide demographic information for the people involved in the turnover. Summary CASREP maintenance data were converted to total maintenance downtime per quarter for each unit and used as the measure of ship performance. The relationship between downtime and turnover was examined at the (continued)

Block 20 (continued) global or aggregate level and at the individual ship level. The data were unable to support any correlation between turnover and ship performance at either level. In addition no relationship was found within classes of ships when grouped by age, type, or size. Descriptive demographic statistics, relative to the personnel involved in the turnover, are provided.

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An Analysis of the Effect of Personnel Turbulence on the Performance of Operational Units

by

Wayne Ronald Reeves
Lieutenant Commander, United States Navy
B.S., Monmouth College, 1971

Submitted in partial fullfillment of the
requirements for the degree of

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NAVAL POSTGRADUATE SCHOOL
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I. INTRODUCTION

A. PROBLEM

The purpose of this thesis is to examine the relationship between personnel turnover/turbulence and unit performance. The emphasis is not on the cause of the turbulence/turnover, but rather the effect on the unit, and what relationships may exist between the personal characteristics of the individuals involved and the organization's productivity.

Currently, turnover/turbulence receives an enormous amount of attention by personnel of all echelons within the Navy. The individual sailor who actually bears the burden is acutely aware of the effects on him, his family and his career. It is extremely difficult for him to own a home or establish any family stability. Unit commanding officers are deeply involved in the detailing process, attempting to insure they can meet their operational missions, while getting the "right man" in the "right job." Fleet Commanders must insure that today's scarce personnel resources are effectively managed throughout their commands. Lastly, the Navy must recruit enough personnel to meet the shortfalls in endstrengths created by a decrease or growth in the number of personnel, and must demand proper management of these personnel to maintain the desired skill/age mix.

The operational unit is the key to the accomplishment of the Navy's mission. Too much personnel turnover has the potential to affect a unit's performance as experienced sailors are replaced with new personnel. The increased demand for training combined with the influx of new personnel may result in the degradation of the unit's ability to perform its mission. Just how much turnover affects a unit's performance has yet to be quantified.

This raises the issue of an adequate measure of effectiveness. Without a measure, many of today's current policies can neither be analyzed nor be effectively designed. This is an issue that must be resolved by the upper levels of Naval management. Assuming an adequate measure of operational effectiveness exists, it seems theoretically possible to use it in the analysis of the effects of personnel turnover/ turbulence. From this analysis, current and/or future policy can be judged, and models generated with which a unit's "behavior" could be predicted given different personnel policies.

B. BACKGROUND

As a manager, every officer is faced with accomplishing assigned tasks in spite of the personnel turbulence his part of the unit experiences. For the purposes of this thesis, personnel turbulence is hypothesized to influence the performance or output of individual members of a work group

or unit. Turbulence is defined to include those factors internal and external to both the individual and the organization that affect performance. Inherent within turbulence are events such as changes in type of work, work responsibilities, living conditions, work hours and conditions and place of residence. Table I contains an expanded listing of potentially significant factors or "life changes," all of which have been shown to affect an individual's performance.

Dr. Robert Alkov, (Alkov, 1975), working for the Naval Safety Center, examined the relationships between life changes, accident behavior, and performance. The majority of accident behavior can be explained by personal stress, produced either internally or externally to the individual. Dr. Alkov examined potentially stressful life events, demonstrated by Dr. Thomas H. Holmes to be correlated with illnesses, and attempted to apply them to accident behavior. The events were ranked and arbitrarily weighted relative to the amount of adaptive or coping behavior required by an individual: the greater amount of coping behavior required, the more significant the impact on the person's performance. The rankings and weights are also shown in Table I. Dr. Alkov concluded that combinations of life change events can create enough stress so as to adversely affect an individual's performance.

Personnel turnover is the most significant factor of turbulence within a unit. Turnover is the flow of personnel into and out of an organization. Implicit in turnover is

TABLE I

LISTING OF SIGNIFICANT LIFE CHANGE EVENTS AND THEIR MEAN WEIGHTS

RANK	LIFE EVENT	MEAN VALUE
1	Death of spouse	100
2	Divorce	73
3	Marital status	65
4	Jail term	63
5	Death of close family member	63
6	Personal injury or illness	53
7	Marriage	50
8	Fired at work	47
9	Marital reconciliation	45
10	Retirement	45
11	Changes in family member's health	44
12	Pregnancy	40
13	Sex difficulties	39
14	Gain of new family member	39
15	Business readjustment	39
16	Change in financial state	38
17	Death of close friend	36
18	Change to different line of work	36
19	Change in no. arguments with spouse	35
20	Mortgage over $10,000	31
21	Foreclosure of mortgage or loan	30
22	Change in work responsibilities	29
23	Son or daughter leaving home	29
24	Trouble with in-laws	28
25	Outstanding personal achievement	28
26	Wife begins or stops work	26
27	Begin or end school	26
28	Change in living conditions	25
29	Revision of personal habits	24
30	Trouble with boss	23
31	Change in work hours, conditions	20
32	Change in residence	20
33	Change in schools	20
34	Change in recreation	19
35	Change in church activities	19
36	Change in social activities	18
37	Mortgage or loan under $10,000	17
38	Change in sleeping habits	16
39	Change in no. of family get-togethers	15
40	Change in eating habits	15
41	Vacation	13
42	Christmas	12
43	Minor violation of the law	11

Note: The mean values are the weights of the relative amount of coping behavior required by the individual.

the creation of many of the "life changes" listed in Table I as personnel are assigned new tasks or work schedules to facilitate the arrival of new personnel and the departure of the "old salts."

As discussed above there is an empirical relationship between personnel turnover and turbulence and organizational performance or productivity. James Amendiola (1981) examined personnel turbulence relative to its effect on the management of an Army training program. Defining turbulence as job changes within the unit and then analyzing different unit history files, he was able to establish from the data a two to one ratio between turbulence and the rate of personnel turnover experienced. This ratio was shown to be positively correlated to the output (training accomplished) of the units. In another study, Victor Kendall (1978) in examining the utilization of air weapons controllers, observed that unit readiness was inversely related to the amount of personnel turbulence the unit experienced. Although recognizing the problem, he was unable to measure the relationship.

It is important to note that possibly not all aspects of personnel turbulence are negative. The very nature of the Navy's manpower system insures that there will be continual personnel movement. Yet the Navy still manages to meet its mission objectives and get the job done. Also, because of turbulence, the Navy is not a stagnant organization. It is continually exposed to new concepts associated with the

influx of new personnel and remains flexible and adaptable to the new directions these ideas foster.

Binkin and Kyriakpoulos(1979) discuss turnover in regards to military manning. They highlight the social arguments that "large personnel turnover characterizes a youthful military force." They examine the transition of the military occupational structure from low skilled mostly "physical" jobs to jobs requiring highly skilled specialists, questioning the relationship among age, experience and productivity.

> "... the military's preoccupation with youthfulness at the expense of experience may not be providing the nation with the most effective armed forces possible at current budgetary levels."

The issue, therefore, is not personnel turnover/turbulence itself, but rather the effect turbulence has on the unit's ability to accomplish its mission.

Much of the literature written to date asserts that an effective unit is one that can accomplish its given mission. There are various administrative attempts to measure unit effectiveness utilized throughout the fleet, i.e., Operational Readiness Inspections (ORI); Administrative, Material and Training Inspections (ADMAT); Navy Technical Proficiency Inspections (NTPI); Propulsion Examining Board (PEB) inspections; and Command Inspections (CI), to name a few of the major ones. All of these measures, although attempting to measure specific quantifiable items, result in a rather subjective "feeling" for the unit's effectiveness or operational readiness.

Perhaps a better measure of a unit's effectiveness would be the productivity of its work force. If we had a measure of the productivity of human capital we could begin to make some estimates and decisions relative to the optimal mix of men and machines, number/types of ships, proper balance of the rates, etc.. Again, however, there exists the problem of defining unit productivity and arriving at an appropriate measurement criterion. Stanley A. Horowitz and Allan Sherman of the Center for Naval Analyses address these problems in their study "A Direct Measure of the Relationship Between Human Capital and Productivity."

Rather than use earnings as an indirect measure of productivity they examined the personal characteristics of the unit's workforce. Since the Navy is under a Congressionally mandated pay system which effectively eliminates any tangible relationship to productivity, they tried to associate "output at the work group level with the characteristics of the people in the group." They decided to utilize the Navy's maintenance casualty reporting system in selected subsystems of Navy ships and to use this as an indication of the production of output. They viewed keeping a ship in good operational condition as a production process with men as one of the inputs. The measure of downtime is the "number of casualties a ship has had multiplied by the average time it took to fix them," and the reduction of downtime implies an increase in productivity. From their analysis they concluded that the general condition of the

selected shipboard subsystems was affected by the experience and paygrade of the personnel maintaining them and the age of the equipment.

Alan Marcus (1982) repeated much of Horowitz and Sherman's work utilizing Navy aviation squadron performance as his measure of productivity. He found that crew characteristics were related to performance and utilized general production function forms to analyze the relative productivity and substitutability of personnel. The results of his efforts support the conclusions of Horowitz and Sherman that productivity is significantly affected by the experience and paygrade of the workforce.

Personnel turnover/turbulence is also a factor in the performance of civilian corporations. For the civilian manager, the issue is one of finding and keeping good personnel. The ability to set work hours, alter work conditions, set pay scales, etc., are some of the tools the organization has available to control personnel turnover. There is a considerable body of literature dealing with why personnel leave their jobs, focusing on personnel turnover as a process and attempting prediction of employee performance based on selected individual variables. Swenson (1982), discusses the different theories in light of their usefulness in analysis of the impact various recruiting sources have on the future outcomes of an individual's performance, and he observes that the models can be seen to be essentially extensions of the March and Simon 1958 ease-of-movement model. Thomas Fogec developed formulas

to predict employee performance utilizing the variables of age, length of service, education, sex, and race. He found that variables that affected the "maturing" process of the individual contributed most significantly to success on the job (Fogec, 1976).

These issues relate to attrition and retention within the military system, issues that continue to receive an enormous amount of research effort. Turnover/turbulence problems associated with retention and attrition are compounded by the sea/shore rotation policy and current retirement system. The ability/requirement to retire at 20 years of service may keep the military young and dynamic, but it also creates a large drain of experienced personnel who could still be productive. Most of the research, whether oriented to the military system or civilian organizations, has focused on the individual and the variables that affect the career decisions made. Very little research has focused on the impact on organizational productivity resulting from turnover and turbulence, nor on the demographics of the personnel involved.

C. PURPOSE

The objectives of this thesis are to:

1. explore any relationship that may exist between turnover and some measure of productivity, and if a relationship is found to exist, examine relationships between productivity and the personnel involved in the turnover;

2. examine the amount of turnover a unit experiences over time; and
3. examine some biographic and demographic information from those personnel involved in the turnover.

The study will examine operational Naval ships and their assigned personnel from the first quarter of fiscal year 1978 to the second quarter of fiscal year 1982. Only information relative to the flow of personnel into or out of a given unit will be analyzed with the assumption that the rate of personnel turnover is directly associated with a units internal turbulence.

II. DATA

A. DATA BASES

Three data bases were utilized in this effort. The first was a Ship Class Unit Identification Code File (SCUIC) initially prepared by Carl G. Carlson of the Naval Postgraduate School in 1981. The data base was constructed by Carlson to facilitate his analysis of first-term enlisted attrition from the Navy (Carlson, 1981). The data are arranged by unit identification code or UIC for each ship in the Navy. Along with the UIC, the ships are identified by hull number, name and homeport location. Additionally, data regarding type activity, ship type, class, subclass, size (based on personnel), age (relative to date of commissioning), type of engineering plant, nuclear capable status, and homeport location are included. A complete description of the data found in the ship data bank can be found in Appendix A.

The second data bank utilized was the Enlisted Survival Tracking File (STF) developed by the Navy Personnel Research and Development Center, and NMPC-164 (then Pers 35-b). The STF is a longitudinal data base of all Navy enlisted personnel since the fourth quarter of 1977. Data are extracted from the end-of-quarter Enlisted Master Record (EMR) for inclusion in the STF. The STF is a sequence of records that represent an individual's history in quarterly intervals. A complete

listing of the data elements found in the STF can be found in Appendix B.

The third data base utilized was an extract from the Consolidated Casualty Reporting System (CASREP). A statistical summary report was provided by the Navy Ships Parts Control Center (SPCC), Mechanicsburg, PA. The CASREP system is designed to provide timely reporting of equipment failures and the effect of these failures on the capability of the unit to perform its assigned missions. One of the products of the system is the computation of downtime hours. Downtime is computed for corrected casualties as follows:

Supply - the number of hours the equipment was down while awaiting parts.

Maintenance - the number of hours the equipment was was down due solely to maintenance. The assumption is that time not awaiting parts is spent on maintenance.

Total - the total number of hours the equipment was inoperative. Total downtime equals supply hours plus maintenance hours. If this total is less than twenty-four hours it is reported as 0.

The summary report number 4400.28-126 was provided for the fiscal year 1980 to second quarter 1982. A quarterly maintenance downtime data base was created by subtracting downtime awaiting parts (DWP) from total corrected downtime. A complete description of this data base can be found in Appendix C.

B. DATA SELECTION: SHIP

The Ship Class Unit Identification Code (SCUIC) file developed by Carlson was utilized to select ships for study in this effort. In order to gain an appreciation in specific as well as broad terms, it was decided to examine representatives from each major ship class. Additionally, it was decided to examine representative ships categorized according to their crew complement into small, medium, large, extra large, and according to their age. For a class of ship to be considered for analysis, there had to be sufficient inventory of ships in the class to have homeports on the east and west coast, as a minimum. Representative ships from each class were selected by random utilizing a random-number generator.

The ships were then categorized as discussed above, and additional ships were selected at random to represent homeports, either east or west coasts, Hawaii, or overseas, for each subcategory. This selection process resulted in 44 ships of interest, which are listed in Appendix D. These 44 ships were checked to insure that all were active during the period of this study. The UIC's of these ships were used to select individuals from the STF.

C. DATA SELECTION: PERSONNEL

The STF file currently consists of over eight million records, which creates a significant data processing problem. To alleviate this problem, and to subset the STF into files

that were more manageable, two Fortran programs were created. The first is based on a program developed by Carlson (1981). The purpose of the program is to determine when an individual reports to or leaves from a ship of interest, and, in order to determine turnover rates, the program selects all individuals who were attached to the ship. In cross-checking the outputs of this program, it was discovered that the STF contains a significant number of typographical errors in the current onboard UIC. The most common error found was a 9 in the first digit of the current onboard UIC. UIC's beginning with nines are allocated to miscellaneous support groups such as civilian contractors, supply processing points, etc., locations normally not manned with enlisted personnel. Further examination revealed that if a nine was found in the first digit of the UIC the last four digits usually matched the last four digits of the UIC either preceding or following it, indicating a typographical error and not a change in the UIC. Additionally, the past actual UIC field did not change appropriately, which indicates that the nine was in fact an error. Therefore, a subroutine was added to the program to eliminate this particular inconsistency.

The program operates in the following manner:

The information from the SCUIC file for the 44 ships of interest is read into a martix called 'UIC.' The first record from the STF is read into a vector 'A' to be utilized in determining when an individual's record ends. The assumption

is made that, a change in the social security account number (SSAN) indicates the beginning of a new person's record. The record reading subroutine (RDREC) is then entered with a vector 'A' containing the first record. The subroutine reads in a record and compares the SSAN with the SSAN in vector 'A'. If they match, the record is put into a matrix 'B' which will contain all of the records for the individual. This process continues until the SSAN's don't match at which time the new SSAN and record are put into the vector 'A'. The program returns from the subroutine with the individual's entire STF file in matrix 'B', the number of records of the individual (rows of 'B'), and the first record of the next person in vector 'A'.

The next operation performed is to test the present onboard UIC's for the typographical errors discussed above. This is necessary because of the method of selection discussed below. This test only examines the UIC variable for a nine in the first digit. If a nine is located as the first digit, the last four digits are compared with those in the UIC that immediately proceeds or follows. If a match is found, the UIC with the nine is changed to match. This process is repeated for every record in matrix 'B', thereby returning a "corrected" matrix 'B' to the main program.

Matrix 'B' next enters a subroutine that creates a subfile of all personnel attached to any ship of interest. The onboard UIC of each record is compared to the UIC's of

all 44 ships. If a match is found, the information from the record, combined with the information from the ship, is merged and written in a subfile called SHIPSRTA.DATA.

Matrix 'B' is returned to the main program and is sent to the subroutine called OUTPUT. This subroutine examines the onbaord UIC's contained in matrix 'B', searching for changes. Since the STF is updated on a quarterly basis and a new line is prepared when a STF variable changes, the line containing a different UIC from the preceding one must have information relative to the individual when he/she reported to the new unit. Therefore, in order to examine this information each record where a UIC changes is written into a new matrix 'C'. The search for changes continues for all records contained in martix 'B'. After all of matrix 'B' is examined, matrix 'C' contains only those records where the UIC changed. Matrix 'C' is then compared with the ships of interest to determine whether or not any of the ships were involved. If a match is found, that record is merged with the SCUIC file and written to create a data set named REPORTED.DATA. Table II shows the variables of interest that were identified from the STF for use in this research project.

The STF is so large that many data fields are missing or contain errors. Another significant problem occurs with the past actual UIC data element. The file is constructed such that this element should reflect the last UIC the individual was attached to prior to assignment to the UIC reflected in

TABLE II

VARIABLES EXTRACTED FROM STF

DATA ELEMENT	LENGTH
Social Security Number	9
As-of-Date Fiscal Year	2
As-of-Date Quarter	1
As-of-Date Count	2
Sex	1
Race	1
Ethnic Group	1
Date of Birth	4
Armed Forces Qualification Test	4
Education Years	2
Present Rate Code	4
Present Pay Grade	1
ADSD	4
Onboard Actual UIC	5
Past Actual UIC	5

the current actual UIC element. However, whenever the individual involved deserts or is hospitalized, the UIC elements do not keep track of all the person's movement. It is suspected that this is due to the nature of the original data source, the quarterly EMR. The changes in UIC's may be reflected in the EMR, but only the last transaction will be reflected in the quarterly report and subsequently the STF. There were enough cases where this problem occurred that the print format creating DEPARTED.DATA was modified to reflect the UIC that the individual should have left. This was possible due to the construction of matrix 'C' in the output subroutine. This matrix contains all records where a change in the UIC was found. Since the file is processed sequentially in time, the first record in matrix 'C' that matches the UIC

of ships of interest must reflect when the individual reported to the ship. Likewise, the very next record must reflect the information when the individual left the ship, regardless of what UIC is in the field. The format statement merging the STF and SCUIC files places the UIC from SCUIC in the data field of past actual UIC instead of the data from the STF. This insures that personnel data of those leaving ships can be analyzed correctly. This process is repeated for the entire STF resulting in three data sets: REPORTED.DATA, DEPARTED.DATA, and SHIPSTRA.DATA. A listing of the elements contained in these data sets is contained in Appendix E, and a program listing is provided in Appendix F.

The STF contains a significant amount of useful information. The Fortran program described above will allow the extraction of that information with a minimum of modification. The merging of selected variables with other types of data, i.e., Ship Class Unit Identification Code file, is easily handled by the formatting contained within the program. It is recommended, however, because of the large number of potential "errors" contained in the STF, that a software package that is tolerant of alphanumerics be utilized for the analysis, i.e., the Statistical Analysis System (SAS).

A second Fortran program was developed to convert the data contained in the SHIPSRTA.DATA subfile into records with discrete fiscal year and quarter information. This was necessary to enable time-line analysis of the personnel data

relative to the given ships of interest. The STF is constructed such that any change in a data element results in the addition of a new record. If no data elements change, the count variable is indexed to indicate the number of quarters for which that particular record is valid. For example, 7745, representing fiscal year 1977, fourth quarter and count equal to 5, is interpreted to mean that the data contained in that record is valid for 5 quarters, beginning at the fiscal year and quarter indicated. In this example the data are valid for 4th quarter, fiscal year 1977, and quarters 1 through 4 of fiscal year 1978. The Fortran program performs in the following manner:

A record is read, and if the variable count is equal to one, the entire record is written to the new data subfile named SHIPSRTA.QUARTER.DATA. If the count is greater than one, a loop is entered that is repeated a number of times equal to the count. While in this loop the record is converted to discrete fiscal year and quarters and written to the SHIPSRTA.QUARTER.DATA.

An individual's length of service (LOS) and age were felt to be major factors relative to the impact he/she had on the effects of personnel turbulence. The STF only contained information concerning the individual's birth data (year and month) and active duty start date (ADSD). Gardner (1980) developed the algorithim used by this program to convert birthdate and active duty start date to age and LOS in months. Appendix G contains the listing for this program.

D. CONSTRAINTS

The major constraint of this effort has been the STF data. Because of the size of the file, careful consideration must be given to the capabilities of the computer system used to process the data. For example, the storage required to establish an SAS system file of REPORTED.DATA and DEPARTED.DATA was in excess of 160 cylinders, where each cylinder hold 19 tracks or 3064 images. Additionally, the problems discussed above, i.e., typographical errors and ommissions, limited data elements available for use as selection criteria. The data elements and codes contained in the STF are based upon standard Navy reporting systems, but many require special manipulation to be useful in this type of research.

III. ANALYSIS

A. MODEL

To place the preceding discussion into a conceptual framework the relationships displayed in Figures 1 and 2 were developed.

Figure 1 displays the hypothetical relationship of downtime to personnel and equipment. Although somewhat self-evident, it is provided to support the model contained in Figure 2. Turnover, operational cycle and size are considered to be aspects of the personnel variable and ship class, size, and subclass define aspects of the equipment variable.

Figure 2 describes the hypothesized functional relationship of downtime with the unit's operational cycle (OPCYCLE), size, rate of turnover, age and class. The interaction shown between OPCYCLE and turnover is provided to indicate the relationship of turnover to the ship's operational cycle. For example, it is common practice for a ship to detach personnel with less than three months remaining until their projected rotation date (PRD), prior to deployment. Likewise there is a concurrent influx of personnel to fill the billets created by these early detachments. It could be argued that turnover could be used as a surrogate indicator of the ship's operational cycle; however, its usefulness in marginal. The intensity of operations, i.e., mission performed, hours underway,

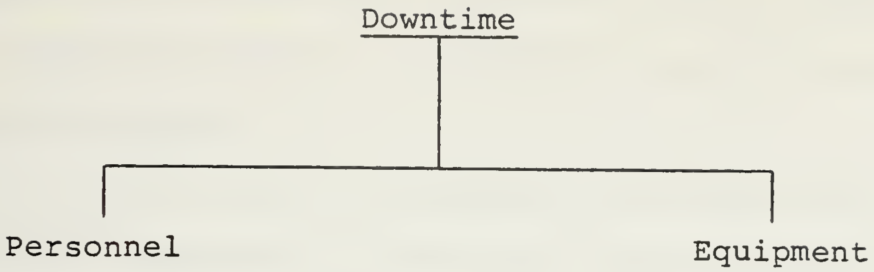

Downtime
Personnel
Equipment

Figure 1. Model of Relationship Between Downtime and Personnel/Equipment

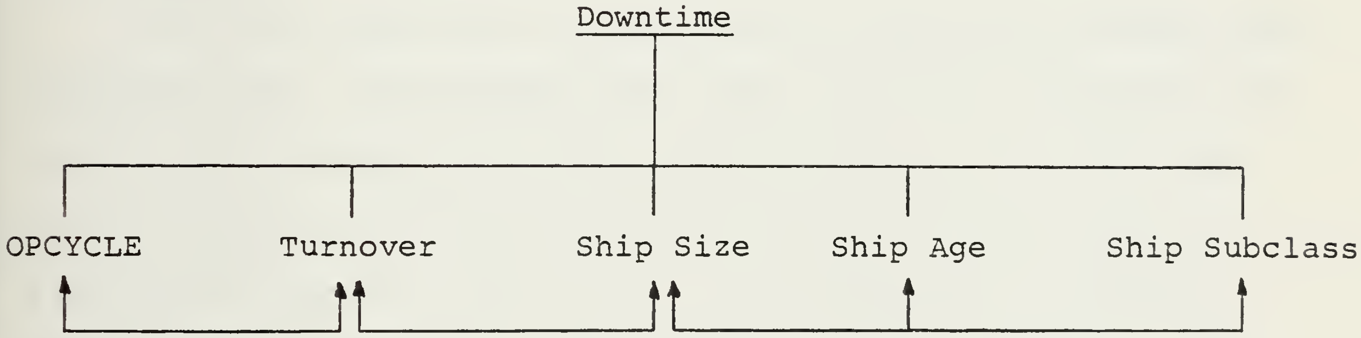

Downtime
OPCYCLE
Turnover
Ship Size
Ship Age
Ship Subclass

Figure 2. Model of Hypothesized Functional Relationships

etc., would not be described, and there would be inherent time lead/lag problems relative to the ship's preparation and stand-down from deployment.

The interaction depicted between ship class, age, and size describes the dependence of the ship's age and size on class. If one knows the subclass of the unit, the approximate type, size and age are also known. For example, given that the ship is a Midway-class carrier implies that the ship type is carrier, size is extra large in terms of personnel, and the ship probably was constructed in the 1940's. However, given that the ship was a Nimitz-class carrier would imply the same type and size information, but that the ship was constructed in the 1970's.

B. ANALYSIS

The three data sets created from the STF file, SHIPSRTA.DATA, REPORTED.DATA, and DEPARTED.DATA were utilized to determine the amount of turnover, by fiscal year and quarter, for each ship of the sample. As defined earlier, turnover is the flow of personnel through a given unit. It is important to realize that different measures can be applied to this concept. For example, NPRDC is currently monitoring personnel turnover throughout the Navy utilizing the ratio of attrition to mean endstrength as their measure. Alternative measures could include: (1) percentage of net change to unit, computed as the ratio of reporters minus departures to mean endstrength; (2) percentage of gain (loss) to the unit computed as the

ratio of personnel who report (depart) to mean endstrength; or, as utilized in this thesis, (3) percentage of total change to the unit, computed as the total personnel flow, reporters plus departers, relative to the mean endstrength. This particular measure was chosen because it was felt that it better reflected the impact of turnover that each organization faces. Utilization of percentage gain (loss) would only describe half of the picture and use of net change could possibly be misleading. If a unit experienced a complete change in personnel its percentage of net change would equal 0, whereas its total turnover would be 200%. For comparison, Appendix H contains the average yearly amount of turnover and the quarterly amount of turnover for each ship, as well as the average yearly turnover rates by ship type.

The first step of the analysis was to examine the relationship of downtime to turnover for all ships in the sample. A data set was developed that contained information in the form of matched pairs of data points, downtime and turnover rates. The data generation from the STF file was very similar to the repeated measures methodology discussed by Kerlinger and Pedhazer (1973), Namboodiri, et al. (1975), and Cohen and Cohen (1975). Although not a true "repeated measures" experiment, it was necessary to utilize this technique in order to develop enough data points for analysis. What resulted was a data set containing 400 data points (40 ships X 10 quarters). Four ships were eventually deleted from the

original sample due to anomalies in the turnover rates or associated CASREP data.

Since the goal of this thesis is to examine the relationship of downtime to turnover, it was assumed that the data were not time specific. The amount of variance in downtime explained by turnover (R-square), given the above assumptions aggregated for the entire sample was .00897; (F=.37,p=.54); effectively zero. This implies that throughout the Navy downtime aboard ships is not affected by personnel turnover. Although CASREP is a "soft" measure of performance, it is significant that no relationship exists in light of an average quarterly turnover rate in excess of 39% for the same period. Given that utilization of CASREP data is plausible, it appears that managment of turnover is not a problem at the "macro" level; i.e., upper echelons of command. It is important to note that it is highly probable that both downtime and turnover are related to the ship's operational cycle (time). As discussed earlier large turnover rates can be expected immediately preceding or following a deployment. Downtime also can be seen to be dependent on the unit's operational cycle, i.e., yard periods, or predeployment workups.

Since a relationship between downtime and turnover cannot be inferred at the "macro" level, possible relationships were explored at the individual ship level. Table III contains the resulting Pearson correlation coefficients by ship UIC for the sample. Examination of Table III highlights two interesting

TABLE III

PEARSON CORRELATION COEFFICIENTS

UIC	r		UIC	r	
02534	-.10		07351	.12	
02538	.44		08808	.19	
03128	-.03		08809	.70	*
03129	.00		20012	.44	
03341	-.63	*	20050	-.07	
03343	.25		20058	.04	
03359	.06		20123	.10	
03368	.85	**	20143	-.12	
04621	-.11		20223	.64	*
04628	.15		20576	.17	
04665	-.14		20632	.00	
04666	-.19		20642	-.14	
04674	.65	*	52198	.34	
04689	.74	**	52234	-.52	
04698	.10		52686	.31	
04951	.00		52699	.00	
05604	-.12		52700	.13	
05833	-.42		54057	-.50	
05836	.40		54064	-.08	
05847	-.02		07183	.12	

* Significant at the .05 level

** Significant at the .01 level

observations relative to the downtime/turnover relationship at this level. First, in only six of the forty ships was any significant relationship found. These six ships are not related in terms of ship type, ship size, or ship age. There is nothing in the current model that can offer an explanation as to why these particular ships have a statistically significant relationship, other than pure chance. Second, fifteen ships within the sample have coefficients that are contrary to the model's hypothesis, as exemplified by their sign. The negative coefficient implies that the greater the amount of turnover, the better the ship's performance.

In order to examine the questions raised above, it was decided to examine the possible relationship of the above individual Pearson correlation coefficients to the categorical descriptive variables of ship type, class, subclass, size and age. The correlation coefficients were merged with the previously discussed data set to create a data set containing ship categorical information, downtime and turnover data, as well as the associated Pearson coefficients. A complete description of this data set is contained in Appendix I.

An ANOVA procedure and the Duncan multiple range test were performed for each category utilizing the correlation coefficient as the dependent variable. Table IV shows the resulting R-square, F, and probability values.

As shown in Table IV and confirmed by the Duncan tests, there are no downtime/turnover relationships within the various

ship categories. Because the Pearson correlation coefficients were generally small and less than 1.0, it was decided to normalize the coefficients utilizing Fisher's Z transformation of r in order to increase the fidelity of the measures. The following formula was utilized (Cohen, 1975):

$$Z = 1/2 * (\log(1+r) - \log(1-r))$$

The ANOVA procedure was repeated and the results are shown in Table V. Again no relationship within the groups were found. This also was confirmed utilizing the Duncan test.

C. SUMMARY OF DATA ANALYSIS

The Survival Tracking File (STF) was subsetted into three subfiles containing personnel who reported to, departed from, or were assigned to one of the initial forty-four ships of interest. From these files, the quarterly rates of reporting, departing and turnover were computed. It was decided to utilize quarterly mean endstrength in the computation of turnover because derivation of the actual number of personnel onboard during the quarter could not be accurately determined. The endstrengths generated from the SHIPSRTA.DATA file were adjusted to relfect the average onboard during the period. The methodology utilized to construct the subfiles resulted in individuals being "counted" in both the current onboard file and the respective reported/departed file. The assumption that all personnel report or depart on the same day within the quarter, i.e., last day, was not considered valid. Since the

TABLE IV

ANOVA RESULTS BY SHIP GROUPINGS

GROUP	R-SQUARE	F-VALUE	PROB>F
Ship type	.06	.59	.67
Ship class	.47	.63	.84
Ship subclass	.70	.80	.70
Size	.03	.40	.75
Age	.02	.27	.84

TABLE V

ANOVA RESULTS BY SHIP GROUPINGS

(TRANSFORMED DATA)

GROUP	R-SQUARE	F-VALUE	PROB>F
Ship type	.06	.57	.68
Ship class	.52	.75	.74
Ship subclass	.74	.99	.54
Size	.04	.50	.68
Age	.02	.28	.83

average person reporting or departing to a unit could be expected to spend only one-half of the quarter onboard, one half of the quarterly reporter and departer totals were subtracted from the total onboard count to adjust for the double counting of personnel.

A ship-specific data set was formed containing ship categorical variables, downtime and turnover data for the ten periods, and eventually the Pearson correlation coefficient for each ship.

The results of the analysis can be summarized as follows:

> The current data and associated assumptions utilized in the model do not support the inference of any relationship between ship performance (downtime) and personnel turnover. This is true at the "macro" or sample level as well as the "micro" or individual ship level. Nor are there any relationships present within the various ship-descriptive categories.

Although statistically significant relationships were found in the work accomplished by Horowitz and Sherman (1968), the analysis performed by this thesis doesn't support the expansion of their methodology to the ship level. It may be that the management at the small-work-group level is effective enough to prevent any adverse effects on ship performance from turnover/turbulence. This conclusion is strictly the opinion of the writer and is not supported by the analysis or the information contained in this report. Other possible

explanations revert to the discussions earlier on the suitability of CASREP data as a performance measure. CASREP data is recognized as a "soft" indication of overall ship performance; however, it is the only quantifiable measure that cuts across the entire spectrum of ship performance and effectiveness. For example, CASREP data are provided for equipment in each of the ship's functional areas, engineering and combat systems, as well as support related systems. Other potentially useful measures of performance would be a combination of measures such as ship steaming hours, exercise grades, standardized training/inspection grades, or objective Unit Reporting system information. Utilization of these other measures were beyond the scope of this effort and merit further research.

Another explanation of the lack of correlation between downtime and turnover may be the differences in their coefficients of variation, 120.8 and 30.9 respectively. These differences can be seen to be related to the anomalies found in both the CASREP reporting system and the extraction of the data from the STF file. Both are recognized as less than satisfactory, which is one of the risks of utilizing non-experimental data.

IV. CONCLUSIONS

The primary objective of this thesis was to examine the relationship between personnel turnover/turbulence and ship performance. Ancillary objectives were to: (1) examine the relationship between the personal characteristics of those personnel involved in the turnover and ship performance, and (2) examine characteristics of the personnel relative to the unit's managment of the turnover.

The analysis determined that no significant relationship could be supported between macro levels of turnover and ship performance. Whether or not personnel is related to downtime or particular ship divisions, systems or subsystems cannot be determined from this research. Since no relationship was found, examination of the correlations of the personal characteristics of the personnel involved in the turnover with ship performance was not attempted. Descriptive statistics of the characteristics of the people reporting to and departing ships are provided in Appendices J and K for the interested reader.

Appendix A

Ship Class Unit Identification Code File

Variable	Position	Field Width
Unit Identification Code	5	5
Class	11	4
Hull Number	16	4
Ship Name	20	14
Homeport	36	6
TAC (Type of Activity Code)	43	1
Ship Type Code	45	1
Class Code	47	2
Sub-class Code	50	2
Size (Personnel)	53	1
Age (Commissioning)	55	1
Engineering Plant	57	1
Nuclear Capable	59	1
Location	61	1
Active/NRF	63	1

Variable Description

UIC - unit identification code assigned to each naval unit and support activity.

Class - Alphanumeric abbreviation of ship class.

Hull number - numeric identification number assigned to each ship hull.

Ship name - name or an abbreviated form of the ship's name.

Homeport - abbreviation of the homeport locaton of each vessel.

TAC - type activity code:

1. Sea Duty - CONUS
2. Sea Duty - Overseas

Ship type:

1. Combatants
2. Auxiliary
3. Submarine
4. Carrier
5. Amphibious
6. Minesweeper

Ship Class - code that numerically represents the general ship classification as found in position 11 through 15.

Ship Sub-class - code that describes the specific class or make of ship with the general class.

Example: USS Coral Sea, coded: 4 6 27.

Ship type - 4: Carrier

Ship class - 6: CV

Ship Sub-class - 27: Midway Class Carrier

Size:

1. Less than 100 personnel
2. 100-199 personnel
3. 200-299 personnel
4. 300-399 personnel

5. 400-499 personnel
6. 500-599 personnel
7. 600-1499 personnel
8. 1500-2499 personnel
9. Greater than 2500 personnel

Ships were grouped for analysis as follows:

1 and 2 = Small

3 and 4 = Medium

5,6, and 7 = Large

8 and 9 = Extra Large

Age:

1. Ships commissioned in the 1940's
2. Ships commissioned in the 1950's
3. Ships commissioned in the 1960's
4. Ships commissioned in the 1970's

Engineering Plant:

1. Nuclear
2. 1200 PSI Steam
3. 600 PSI Steam
4. Diesel
5. Diesel Electric
6. Gas Turbine

Nuclear Capable:

1. Nuclear Capable
2. Non-nuclear Capable

Location:

1. East Coast
2. West Coast
3. Overseas
4. Hawaii

Active or Reserve Status:

1. Reserve
2. Active

These variable descriptions were developed by Gardner (1981) and his definitions of small, medium, large and extra large were utilized for this thesis.

Appendix B

Survival Tracking File

Data Element	Length	Start
Social Security Number	9	1
As-of Date Fiscal Year	2	10
As-of Date Quarter	1	12
As-of Date Count	2	13
Strength Indicator	1	15
Sex	1	16
Race	1	17
Ethnic Group	1	18
Date of Birth	4	19
AFQT	2	23
Education Years	2	25
Education Certification	1	27
A-School Indicator	1	28
Dependency-Primary	1	29
Term of Enlistment	1	30
Type of Enlistment	2	31
Term Status	1	33
Number of Enlistment	1	34
Type of Acquisition	2	35
Type of Program	1	37
Rate/Special Program Code	5	38

Branch/Class	2	43
RADO Months	3	45
Enlisted Designator	1	48
Present Rate Code	4	49
Present Pay Grade	1	53
PNEC	4	54
SNEC	4	58
ADSD	4	62
PEBD	4	66
CED	4	70
CADD	4	74
EAOS	4	78
Soft EAOS	4	82
EAOS Change Indicator	1	86
Onboard Actual UIC	5	87
Onboard ACC	3	92
Onboard Sea/Shore Code	1	95
Onboard Transfer Date	4	96
Past Actual UIC	5	100
SRB Received Indicator	1	105
SRB Zone	1	106
SRB Skill Indicator	1	107
SRB Award Level	1	108
RQC	2	109
Loss Date of Occurence	4	111
Loss Code Navy	3	115
Loss Code DOD	3	118

Appendix C

CASREP Data

Ship Type

Hull Number

Severity of Outstanding Casreps
- C-2
- C-3
- C-4
- Total

Severity of Corrected Casreps
- C-2
- C-3
- C-4
- Total

Downtime Awaiting Parts (DWP)

Open Downtime

Corrected Downtime

Note:

Maintenance Downtime = Corrected Downtime - DWP

This data was converted to the following data set:

Data Element	Length	Start
UIC	5	1
TIME (Fiscal year and quarter)	3	9
Downtime (maintenance)	3	14

Appendix D

Ships of the Sample

```
02534   ARS      39 CONSERVER           PEARL    4 2 34 77 2 1 6 2 4 2
02538   ARS      43 RECOVERY            L CRK    2 2 34 77 2 1 6 2 1 2
03128   LSD      28 THOMASTON           SDGO     2 5 19 57 4 2 3 2 2 2
03129   LSD      29 PLYMOUTH ROCK       L CRK    2 5 19 57 4 2 3 2 1 2
03341   CV       41 MIDWAY              YOKSKA   4 4 06 27 9 1 3 1 3 2
03343   CV       43 CORAL SEA           ALAMED   2 4 06 27 9 1 3 1 2 2
03359   CV       59 FORRESTAL           MAYPRT   2 4 06 25 9 2 3 1 1 2
03368   CVN      68 NIMITZ              NORVA    2 4 05 22 9 4 1 1 1 2
04621   AS       12 SPERRY              SDGO     5 2 35 81 8 1 3 1 2 2
04628   AS       18 ORION               CHARLE   5 2 35 81 8 1 3 1 1 2
04637   AD       17 PIEDMONT            NORVA    2 2 24 66 7 1 3 1 1 2
04665   DDG      33 PARSONS             YOKSKA   4 1 09 39 4 2 2 1 3 2
04666   DD      950 RICHARD EDWARDS     PEARL    4 1 10 41 3 2 2 1 4 2
04674   DDG       8 LYNDE MCCORMICK     SDGO     2 1 09 37 4 3 2 1
04689   AS       31 HUNLEY              AGANA    4 2 35 80 8 3 3 1 3 2
04698   FFG       5 RICHARD L PAGE      PHILA    2 1 11 44 3 3 3 1 1 2
04951   AO       51 ASHTABULA           PEARL    4 2 32 75 4 1 3 2 4 2
05604   SS      581 BLUEBACK            SDGO     2 3 04 16 1 2 6 2 1 2
05833   ACE       2 CAMDEN              BREM     2 2 30 73 7 3 3 1 2 2
05836   AFS       5 CONCORD             NORVA    2 2 26 69 5 3 3 2 1 2
05847   LKA     116 ST LOUIS            SDGO     2 5 21 59 3 3 3 2 2 2
07183   LPD       9 DENVER              SDGO     2 5 18 54 5 3 3 1 2 2
07351   LPH       3 OKINAWA             SDGO     2 5 17 53 7 3 3 1 2 2
08808   AR        5 VULCAN              NORVA    5 2 33 76 7 1 3 2 1 2
08809   AR        7 HECTOR              SFRAN    2 2 33 76 7 1 3 2 2 2
20012   LSD      37 PORTLAND            CHESTE   2 5 19 56 4 4 3 2 1 2
20050   FF     1079 BOWEN               CHARLE   2 1 12 45 3 4 2 1 1 2
20058   FF     1087 KIRK                YOKSKA   4 1 12 45 3 4 2 1 3 2
20112   AE       29 MOUNT HOOD          CONCRD   2 2 25 67 4 4 3 1 2 2
20123   AOR       4 SAVANNAH            NORVA    2 2 31 74 4 4 3 1 1 2
20143   ASR      21 PIGEON              VALLEJ   2 2 36 82 2 4 4 2 2 2
20223   LST    1197 BARNSTABLE CTY      L CRK    2 5 20 58 4 4 4 2 1 1
20576   DD      965 KINKAID             SDGO     2 1 10 40 3 4 5 1 2 2
20632   LHA       2 SAIPAN              NORVA    2 5 16 52 7 4 2 1 1 2
20642   SSN     687 RICHARD RUSSELL     GROTON   2 3 03 07 2 4 1 1 1 2
30109   SSBN    611 J MARSHALL BLUE     PEARL    4 3 01 02 2 3 1 1 4 2
30110   SSBN    611 J MARSHALL GOLD     PEARL    4 3 01 02 2 3 1 1 4 2
52198   DD      938 JONAS INGRAM        CHARLE   2 1 10 41 3 2 2 1 1 2
52234   DDG      40 COONTZ              NORVA    2 1 09 38 4 3 2 1 1 2
52686   DDG      46 PREBLE              PEARL    4 1 09 38 4 3 2 1 4 2
52699   CG       24 REEVES              PEARL    4 1 08 32 5 3 2 1 4 2
52700   CGN      25 BAINBRIDGE          SDGO     2 1 07 33 5 3 1 1 2 2
54057   FF     1062 WHIPPLE             PEARL    4 1 12 45 3 4 2 1 4 2
54064   FF     1069 BAGLEY              SDGO     2 1 12 45 3 4 2 1 2 2
```

Appendix E

Subfile Data Elements

The data elements listed below are contained in the REPORTED. DATA, DEPARTED.DATA AND SHIPSRTA.DATA subfiles.

Element	Variable Name	Start	Length
Social Security Number	SSN	1	9
As-of-Date Fiscal Year	FY	11	2
As-of-Date Quarter	Quarter	13	1
As-of-Date Count	Count	14	2
Sex	Sex	17	1
Race	Race	18	1
Ethnic Group	Ethnicgp	20	1
Date of Birth (year)	DOBYR	22	2
Date of Birth (month)	DOBMO	24	2
AFQT	AFQT	27	2
Education	Ed	30	2
Current Rate	Rate	33	4
Current Paygrade	Paygrde	37	1
Active Duty Start Date (year)	ADSDYR	39	2
Active Duty Start Date (month)	ADSDMO	41	2
Current Actual Onboard UIC	UIC	44	5
Sea/Shore Code	Seashore	50	1
Past Actual Onboard UIC	PastUIC	52	5
Ship Class	Stype	59	4

Hull Number	Hulln	64	4
Ship Name	-	69	14
Homeport	-	88	6
Type Activity Coce	TAC	96	1
Ship Type Code	SCODE	98	1
Class Code	SCLASS	100	2
Sub-class Code	Subclass	104	2
Size (Personnel)	Size	107	1
Age (Commissioning)	Sage	109	1
Engineering Plant	EngPlnt	111	1
Nuclear Capable	Neuc	113	1
Location	Location	115	1
Active/NRF	Status	117	1

Appendix F

Personnel Selection Fortran Program Listing

```
//REEVES6 JOB (2313,0144),'WAYNE R REEVES 1444',CLASS=F
//*MAIN ORG=NPGVM1.2313P
//   EXEC FORTXCG
//SYSIN DD *
C          THIS PROGRAM READS IN 9 DATA FIELDS FROM
C          THE STF FILE.  FOR A DIFFERENT NUMBER OF DATA FIELDS
C          THE DIMENSION OF 'A' AND THE CCLUMN DIMENSION OF 'B'
C          MUST BE CHANGED.
C
C         THE ROW DIMENSION OF B SHOULD BE GREATER THAN THE MOST
C          RECORDS ONE INDIVIDUAL COULD HAVE.
C
C         THIS PROGRAM FINDS ALL ONE INDIVIDUAL'S RECORDS BY
C          COMPARING SOCIAL SECURITY NUMBERS.  WHEN THE SSAN
C          CHANGES, THE BEGINNING OF A NEW PERSON'S RECORDS IS
C          ASSUMED.  THE SSAN IS STORED IN SSN(2) AS A1,A8
C
      REAL*8 A,B,SSN
      REAL*8 UIC
      COMMON A(16),B(20,16),SSN(2),UIC(44,10)
C
C        READ IN THE SHIP UIC'S
C           SET THE NUMBER OF UIC'S = NUIC
C
      NUIC=44
      DO   10 I=1,NUIC
   10 READ(4,11) (UIC(I,J),J=1,10)
   11 FORMAT(A1,A4,8A8)
C
C         READ IN THE VERY FIRST  RECORD
C
      READ(1,50) A
50    FORMAT (A1,A8,A5,1X,A1,A1,A1,A4,A2,A2,T49,A5,T62,A4,T87,A1,
     *A4,3X,A1,T100,A1,A4)
      SSN(1)=A(1)
      SSN(2)=A(2)
      LAST=1
C
C     SUBROUTINE RDREC  READS IN ALL THE RECORDS FOR ONE PERSON
C     ON OUTPUT:
C                  B:   ALL THE RECORDS FOR ONE PERSON
C                       THE RECORDS ARE SAVED ROW BY ROW. (MATRIX)
C               NREC:   NUMBER OF RECORDS FOR ONE PERSON. (SCALAR)
C                       NUMBER OF ROWS OF B USED BY THIS PERSON.
C                  A:   THE FIRST RECORD OF THE NEXT PERSON  (VECTOR)
C                SSN:   THE SOCIAL SECURITY NUMBER OF THE NEXT
C                       PERSON (VECTOR).
C
```

```
C    FOR THE LAST PERSCN, RDREC RETURNS LAST=2
C        UP TO THAT TIME, LAST=1
C
  100 CONTINUE
      CALL RDREC(NREC,LAST)
C
C     AT THIS POINT YOU HAVE ALL ONE INDIVIDUAL'S RECORDS IN
C     MATRIX 'B'.  YOU CAN CALCULATE OR EXTRACT THE INFORMATION
C     OF INTEREST AND PRINT IT CUT OR WRITE IT TO DISK.
C
C
C
C     THIS SUBROUTINE WILL TEST FOR ERRORS IN THE FIRST DIGIT OF THE
C     CURRENT ONBCARD UIC.  IF ONE IS FOUND A CORRECTION IS MADE.
C     THE ONLY ERROR TESTED FOR IS A 9 AS THE FIRST CHARACTER  OF THE
C     UIC.
C
      CALL TEST(NREC,LAST)
C
C
C   THIS SUBROUTINE WILL CREATE A SUBFILE OF ALL PERSONNEL ATTACHED TO
C   THE SHIPS OF INTEREST. IT COMPARES EVERY RECORD IN MATRIX B TO THE
C   SHIPS OF INTEREST. IF A MATCH IS FOUND IT PRINTS THE RECORD
C
      CALL SHPSRT(NREC,LAST)
C
C   THIS SUBRCUTINE WILL DETERMINE CHANGES IN THE INDIVIDUALS UIC
C   FILE. IT WILL THEN COMPARE THE UICS TO SHIP UIC FILE AND PRINT
C   A FILE OF REPORTERS AND LEAVERS.
C
      CALL CUTPUT(NREC,NUIC)
C
C          IF THIS IS THE LAST CASE,
C          BRANCH OUT OF THE LOOP.
C
  220 IF(LAST.EQ.2) GO TO 250
      GO TO 100
C
  250 CONTINUE
      STOP
      END
C***********************************************************************
C*****************RECORD READING SUBROUTINE****************************
C***********************************************************************
      SUBROUTINE RDREC(NREC,LAST)
      REAL*8 A,B,SSN
      REAL*8 UIC
      COMMON A(16),B(20,16),SSN(2),UIC(44,10)
```

```
      DO 10 I=1,16                                                      REE00970
   10 B(1,I)=A(I)                                                       REE00980
      NREC=1                                                            REE00990
C                                                                       REE01000
C         READ IN A NEW LRECL                                           REE01010
C                                                                       REE01020
   40 READ(1,50,END=300) A                                              REE01030
50    FORMAT (A1,A8,A5,1X,A1,A1,A1,A4,A2,A2,T49,A5,T62,A4,T87,A1,       REE01040
     *A4,3X,A1,T100,A1,A4)                                              REE01050
C                                                                       REE01060
C      COMPARE THE PREVIOUS SSN WITH THE NEW ONE.                       REE01070
C                                                                       REE01080
      IF(SSN(1).EQ.A(1).AND.SSN(2).EQ.A(2)) GO TO 200                   REE01090
C                                                                       REE01100
C     WITHOUT THE MATCH, ALL ONE PERSON'S RECORDS HAVE                  REE01110
C     BEEN READ IN.  SAVE THE NEW PERSON'S SSN AND RETURN               REE01120
C                                                                       REE01130
      SSN(1)=A(1)                                                       REE01140
      SSN(2)=A(2)                                                       REE01150
      RETURN                                                            REE01160
C                                                                       REE01170
C      ACCUMULATE ANOTHER RECORD OF INFORMATION FOR                     REE01180
C      ONE PERSON IN MATRIX 'B'.                                        REE01190
C                                                                       REE01200
  200 CONTINUE                                                          REE01210
      NREC=NREC+1                                                       REE01220
      DO 220 I=1,16                                                     REE01230
  220 B(NREC,I)=A(I)                                                    REE01240
      GO TO 40                                                          REE01250
  300 LAST=2                                                            REE01260
      RETURN                                                            REE01270
      END                                                               REE01280
C***********************************************************************REE01290
C**********************OUTPUT SUBROUTINE********************************REE01300
C***********************************************************************REE01310
      SUBROUTINE OUTPUT(NREC,NUIC)                                      REE01320
      REAL*8 A,B,SSN                                                    REE01330
      REAL*8 UIC                                                        REE01340
      REAL*8 C(20,16)                                                   REE01350
      COMMON A(16),B(20,16),SSN(2),UIC(44,10)                           REE01360
C                                                                       REE01370
C          A RECORD IS WRITTEN FROM MATRIX B INTO                       REE01380
C          MATRIX C WHEN THE UIC CHANGES.                               REE01390
C                                                                       REE01400
      DO 10 I=1,16                                                      REE01410
   10 C(1,I)=B(1,I)                                                     REE01420
C                                                                       REE01430
C           NDIFF IS THE NUMBER OF DIFFERENT UIC'S                      REE01440
```

```
C                                                                       REE01450
      NDIFF=1                                                           REE01460
      IF (NREC.EQ.1) GO TO 60                                           REE01470
C                                                                       REE01480
C        IF THE ITH UIC IS NOT EQUAL THE PREVIOUS UIC,                  REE01490
C          WRITE THE ITH RECORD FROM MATRIX B INTO MATRIX C.            REE01500
C          MATRIX C IS INDEXED BY NDIFF                                 REE01510
C                                                                       REE01520
      DO 20 I=2,NREC                                                    REE01530
        I1=I-1                                                          REE01540
        IF((B(I,12).EQ.B(I1,12)).AND.(B(I,13).EQ.B(I1,13))) GO TO 20  REE01550
        NDIFF=NDIFF+1                                                   REE01560
           DO 15 J=1,16                                                 REE01570
   15      C(NDIFF,J)=B(I,J)                                            REE01580
   20 CONTINUE                                                          REE01590
C                                                                       REE01600
C        MATRIX C CONTAINS THE RECORDS WHICH HAD DIFFERENT UIC'S        REE01610
C        THE NUMBER OF ROWS IN C = NDIFF                                REE01620
C                                                                       REE01630
C            DO 90 = LOOPS THROUGH ALL THE ROWS OF C                    REE01640
C            DO 80 = COMPARES THE RECORD'S UIC AGAINST ALL THE          REE01650
C                      SHIP UIC'S                                       REE01660
C                                                                       REE01670
   60 CONTINUE                                                          REE01680
      DO 90 I=1,NDIFF                                                   REE01690
      DO 80 J=1,NUIC                                                    REE01700
C                        IF UIC IS NOT A SHIP, BRANCH AROUND THE WRITE  REE01710
C                                                                       REE01720
      IF((UIC(J,1).NE.C(I,12)).OR.(UIC(J,2).NE.C(I,13))) GO TO 80      REE01730
         WRITE(2,85)   (C(I,K),K=1,16),(UIC(J,K),K=3,10)                REE01740
         WRITE(3,85)   (C(I+1,K),K=1,14),(UIC(J,K),K=1,10)              REE01750
85                 FORMAT (A1,A8,1X,A5,1X,A1,A1,1X,A1,1X,A4,1X,A2,1X,   REE01760
     *             A2,1X,A5,1X,A4,1X,A1,A4,1X,A1,1X,A1,A4,8A8)          REE01770
         GO TO 90                                                       REE01780
   80 CONTINUE                                                          REE01790
   90 CONTINUE                                                          REE01800
      RETURN                                                            REE01810
      END                                                               REE01820
C***********************************************************************REE01830
C********************** SUBROUTINE TEST ********************************REE01840
C***********************************************************************REE01850
      SUBROUTINE TEST (NREC,LAST)                                       REE01860
      REAL*8 A,B,SSN                                                    REE01870
      REAL*8 UIC,NINE                                                   REE01880
      DATA NINE/'9'/                                                    REE01890
      COMMON A(16),B(20,16),SSN(2),UIC(44,10)                           REE01900
C                                                                       REE01910
C                                                                       REE01920
```

```
C        THIS SUBROUTINE WILL TEST AN INDIVIDUALS RECORD FOR A TYPO-
C        GRAPHICAL ERROR IN THE FIRST DIGIT OF THE CURRENT ONBOARD
C        UIC.  IT WAS DETERMINED THAT A 9 IN THE FIRST DIGIT OF A UIC
C        WAS AN INDICATOR OF A POSSIBLE ERROR.  UIC'S THAT BEGIN WITH
C        A 9 ARE USUALLY RESERVED FOR CIVILIAN SUPPORT ACTIVITIES.
C        THE TEST LOCATES A 9 IN THE FIRST DIGIT OF THE UIC AND THEN
C        COMPARES THE LAST FOUR DIGITS WITH THE UIC THAT IMMEDIATELY
C        PROCEEDS CR FOLLOWS. IF A MATCH IS FOUND THE UIC WITH THE 9
C        IS CHANGED TO MATCH.
C
C
      IF (NREC .EQ. 1) GO TO 20
C
      DO 10 I=1,NREC
         IF (B(I,12) .NE. NINE) GO TO 10
              IF (I .EQ. 1) GO TO 300
              IF (I .EQ. NREC) GO TO 400
              IF ((B(I,13).NE.B(I+1,13)).AND.(B(I,13).NE.B(I-1,13)))
     *         GO TO 10
                   IF (B(I,13) .EQ. B(I+1,13)) GO TO 500
                       B(I,12)=B(I-1,12)
                       GO TO 10
500   CONTINUE
                       B(I,12)=B(I+1,12)
                        GO TO 10
400   CONTINUE
                   IF (B(I,13) .NE. B(I-1,13)) GO TO 10
                        B(I,12)=B(I-1,12)
                        GO TO 10
C
C
300           CONTINUE
                   IF (B(I,13).EQ.B(I+1,13)) GO TO 10
                   B(I,12)=B(I+1,12)
                   GO TO 10
C
10    CONTINUE
C
C
C
20    CONTINUE
      RETURN
      END
C***********************************************************************
C**************** SHIP SORTING SUBROUTINE ******************************
C***********************************************************************
C
C
```

```
C                                                                       REE02410
      SUBROUTINE SHPSRT (NREC,LAST)                                     REE02420
C                                                                       REE02430
C                                                                       REE02440
C    THIS PROGRAM WILL COMPARE EACH RECORD IN THE INDIVIDUAL'S FILE WITH REE02450
C    A FILF OF SHIP UIC'S OF INTEREST. IF A MATCH IS FOUND,             REE02460
C    IT WILL WRITE THE RECORD IN ANOTHER FILE.                          REE02470
C                                                                       REE02480
C                                                                       REE02490
C    INITIALIZE THE VARIABLES:                                          REE02500
C                                 B(20,15) THE MATRIX CONTAINING ALL    REE02510
C                                      CORRECTED RECORDS OF THE INDIV.  REE02520
C                                 UIC(44,10) THE MATRIX CONTAINING ALL THE REE02530
C                                     DATA OF THE SHIPS OF INTEREST     REE02540
C                                                                       REE02550
C                                                                       REE02560
      INTEGER I,J,K,LAST,L                                              REE02570
      REAL*8 A,B,SSN                                                    REE02580
      REAL*8 UIC,NINE                                                   REE02590
      COMMON A(16),B(20,16),SSN(2),UIC(44,10)                           REE02600
C                                                                       REE02610
C                                                                       REE02620
C                                                                       REE02630
C                                                                       REE02640
C                                                                       REE02650
C    THIS SECTION WILL DO THE COMPARISON OF SHIP AND INDIVIDUAL UICS    REE02660
C                                                                       REE02670
      DO 005 J=1,NREC                                                   REE02680
      DO 002 K=1,44                                                     REE02690
         IF (B(J,12).NE.UIC(K,1).OR.(B(J,13).NE.UIC(K,2))) GO TO 002    REE02700
         WRITE(15,85)  (B(J,I),I=1,16),(UIC(K,L),L=3,10)                REE02710
85                FORMAT (A1,A8,1X,A5,1X,A1,A1,1X,A1,1X,A4,1X,A2,1X,    REE02720
     *            A2,1X,A5,1X,A4,1X,A1,A4,1X,A1,1X,A1,A4,8A8)           REE02730
002   CONTINUE                                                          REE02740
005   CONTINUE                                                          REE02750
      RETURN                                                            REE02760
      END                                                               REE02770
//GO.FT01F001 DD UNIT=3400-6,VOL=SER=NPS317,DISP=(OLD,PASS),            REE02780
//    LABEL=(2,BLP,,IN),DCB=(RECFM=FB,LRECL=120,BLKSIZE=32400,DEN=4)    REE02790
//GO.FT02F001 DD DCB=(RECFM=FB,LRECL=120,BLKSIZE=12000),                REE02800
//          DSN=MSS.S2313.REPORTED.DATA6,DISP=(OLD,KEEP)                REE02810
//GO.FT03F001 DD DCB=(RECFM=FB,LRECL=120,BLKSIZE=12000),                REE02820
//          DSN=MSS.S2313.DEPARTED.DATA6,DISP=(OLD,KEEP)                REE02830
//GO.FT15F001 DD DISP=(OLD,KEEP),                                       REE02840
//          DCB=(RECFM=FB,LRECL=120,BLKSIZE=12000),                     REE02850
//          DSN=MSS.S2313.SHIPSRTA.DATA6                                REE02860
//GO.FT04F001 DD *                                                      REE02870
02534  ARS    39 CONSERVER         PEARL   4 2 34 77 2 1 6 2 4 2        REE02880
```

```
02538  ARS     43  RECOVERY             L CRK   2 2 34 77 2 1 6 2 1 2        REE02890
03128  LSD     28  THOMASTON            SDGO    2 5 19 57 4 2 3 2 2 2        REE02900
03129  LSD     29  PLYMOUTH ROCK        L CRK   2 5 19 57 4 2 3 2 1 2        REE02910
03341  CV      41  MIDWAY               YOKSKA  4 4 06 27 9 1 3 1 3 2        REE02920
03343  CV      43  CORAL SEA            ALAMED  2 4 06 27 9 1 3 1 2 2        REE02930
03359  CV      59  FORRESTAL            MAYPRT  2 4 06 25 9 2 3 1 1 2        REE02940
03368  CVN     68  NIMITZ               NORVA   2 4 05 22 9 4 1 1 1 2        REE02950
04621  AS      12  SPERRY               SDGO    5 2 35 81 8 1 3 1 2 2        REE02960
04628  AS      18  ORION                CHARLE  5 2 35 81 8 1 3 1 1 2        REE02970
04637  AD      17  PIEDMONT             NORVA   2 2 24 66 7 1 3 1 1 2        REE02980
04665  DDG     33  PARSONS              YOKSKA  4 1 09 39 4 2 2 1 3 2        REE02990
04666  DD     950  RICHARD EDWARDS      PEARL   4 1 10 41 3 2 2 1 4 2        REE03000
04674  DDG      8  LYNDE MCCORMICK      SDGO    2 1 09 37 4 3 2 1 2 2        REE03010
04689  AS      31  HUNLEY               AGANA   4 2 35 80 8 3 3 1 3 2        REE03020
04698  FFG      5  RICHARD L PAGE       PHILA   2 1 11 44 3 3 3 1 1 2        REE03030
04951  AO      51  ASHTABULA            PEARL   4 2 32 75 4 1 3 2 4 2        REE03040
05604  SS     581  BLUEBACK             SDGO    2 3 04 16 1 2 6 2 1 2        REE03050
05833  AOE      2  CAMDEN               BREM    2 2 30 73 7 3 3 1 2 2        REE03060
05836  AFS      5  CONCORD              NORVA   2 2 26 69 5 3 3 2 1 2        REE03070
05847  LKA    116  ST LOUIS             SDGO    2 5 21 59 3 3 3 2 2 2        REE03080
07183  LPD      9  DENVER               SDGO    2 5 18 54 5 3 3 1 2 2        REE03090
07351  LPH      3  OKINAWA              SDGO    2 5 17 53 7 3 3 1 2 2        REE03100
08808  AR       5  VULCAN               NORVA   5 2 33 76 7 1 3 2 1 2        REE03110
08809  AR       7  HECTOR               SFRAN   2 2 33 76 7 1 3 2 2 2        REE03120
20012  LSD     37  PORTLAND             CHESTE  2 5 19 56 4 4 3 2 1 2        REE03130
20050  FF    1079  BOWEN                CHARLE  2 1 12 45 3 4 2 1 1 2        REE03140
20058  FF    1087  KIRK                 YOKSKA  4 1 12 45 3 4 2 1 3 2        REE03150
20112  AE      29  MOUNT HOOD           CONCRD  2 2 25 67 4 4 3 1 2 2        REE03160
20123  AOR      4  SAVANNAH             NORVA   2 2 31 74 4 4 3 1 1 2        REE03170
20143  ASR     21  PIGEON               VALLEJ  2 2 36 82 2 4 4 2 2 2        REE03180
20223  LST   1197  BARNSTABLE CTY       L CRK   2 5 20 58 4 4 4 2 1 1        REE03190
20576  DD     965  KINKAID              SDGO    2 1 10 40 3 4 5 1 2 2        REE03200
20632  LHA      2  SAIPAN               NORVA   2 5 16 52 7 4 2 1 1 2        REE03210
20642  SSN    687  RICHARD RUSSELL      GROTON  2 3 03 07 2 4 1 1 1 2        REE03220
30109  SSBN   611  J MARSHALL BLUE      PEARL   4 3 01 02 2 3 1 1 4 2        REE03230
30110  SSBN   611  J MARSHALL GOLD      PEARL   4 3 01 02 2 3 1 1 4 2        REE03240
52198  DD     938  JONAS INGRAM         CHARLE  2 1 10 41 3 2 2 1 1 2        REE03250
52234  DDG     40  COONTZ               NORVA   2 1 09 38 4 3 2 1 1 2        REE03260
52686  DDG     46  PREBLE               PEARL   4 1 09 38 4 3 2 1 4 2        REE03270
52699  CG      24  REEVES               PEARL   4 1 08 32 5 3 2 1 4 2        REE03280
52700  CGN     25  BAINBRIDGE           SDGO    2 1 07 33 5 3 1 1 2 2        REE03290
54057  FF    1062  WHIPPLE              PEARL   4 1 12 45 3 4 2 1 4 2        REE03300
54064  FF    1069  BAGLEY               SDGO    2 1 12 45 3 4 2 1 2 2        REE03310
```

Appendix G

Quarter Conversion Fortran Program Listing

```
//REEVESC JOB (2313,0144),'WAYNE R REEVES 1444',CLASS=C                 SOR00010
//*MAIN ORG=NPGVM1.2313P                                                SOR00020
//  EXEC FORTXCG                                                        SOR00030
//SYSIN DD *                                                            SOR00040
C          THIS PROGRAM WILL CREATE ANOTHER DATA SET FROM THE           SOR00050
C          SUBSETTED STF FILES. IT WILL INDEX THE FISCAL YEAR           SOR00060
C          AND QUARTER OF THE RECORD AND THEN REWRITE IT IN AN-         SOR00070
C          ONTHER DATA BANK.                                            SOR00080
C                                                                       SOR00090
C         THE RECORD WILL BE READ INTO A VECTOR 19 SPACES LONG          SCR00100
C         ELEMENTS OF THE VECTOR WILL BE USED TO DETERMINE CURRENT      SOR00110
C         QUARTER AND COUNT AND THEN INDEXED ACCORDINGLY.               SOR00120
C                                                                       SCR00130
C                                                                       SOR00140
C                                                                       SCR00150
      REAL*8 A(19)                                                      SCR00160
      INTEGER COUNT,Q,I                                                 SOR00170
      COUNT=0                                                           SCR00180
C                                                                       SOR00190
C        READ IN THE FIRST RECORD                                       SOR00200
C         SET COUNT = TO THE RECORD'S COUNT AND Q = TO RECORD'S QUARTER SOR00210
C                                                                       SOR00220
010   READ(1,50,END=500) A(1),A(2),I3,I4,I5,A(6),A(7),A(8),             SOR00230
     *A(9),A(10),A(11),A(12),A(13),A(14),A(15),A(16),A(17),A(18),A(19)  SOR00240
50               FORMAT (A1,A8,1X,I2,I1,I2,13A8,A1)                     SOR00250
      COUNT=I5                                                          SGR00260
      Q=I4                                                              SOR00270
C                                                                       SCR00280
C                                                                       SCR00290
C                                                                       SOR00300
C                                                                       SCR00310
C                                                                       SCR00320
C                                                                       SOR00330
C                                                                       SCR00340
C     THE FIRST TEST WILL DETERMINE WHETHER THE RECORD IS FOR           SOR00350
C     ONE QUARTER ONLY. IF IT IS THE RECORD WILL BE WRITTEN TO          SOR00360
C     THE NEW FILE AS IS. OTHERWISE THE PROGRAM WILL BRANCH AROUND      SOR00370
C     THE WRITE TO THE NEXT TEST.                                       SOR00380
C                                                                       SOR00390
C                                                                       SCR00400
C                                                                       SOR00410
      IF (COUNT .NE. 1) GO TO 100                                       SOR00420
      WRITE(2,50) A(1),A(2),I3,I4,I5,A(6),A(7),A(8),                    SOR00430
     *A(9),A(10),A(11),A(12),A(13),A(14),A(15),A(16),A(17),A(18),A(19)  SOR00440
         GO TO 010                                                      SOR00450
C                                                                       SOR00460
C                                                                       SOR00470
C     THIS TEST WILL BE REPEATED FOR THE AMOUNT OF THE COUNT. IT WILL   SOR00480
```

```
C     TEST TO DETERMINE WHETHER THE RECORD STARTS IN THE FOURTH         SOR00490
C     QUARTER. IF IT DOES IT INDEXES THE FISCAL YEAR AND RESETS THE     SOR00500
C     QUARTER TO ONE. OTHERWISE, IT SETS THE COUNT TO ONE,INDEXES THE   SOR00510
C     QUARTER AND WRITES THE RECORD.                                    SOR00520
C                                                                       SOR00530
C                                                                       SOR00540
C                                                                       SOR00550
C                                                                       SOR00560
C                                                                       SOR00570
100   DO 200 I=1,COUNT                                                  SOR00580
         IF (Q .EQ. 4) GO TO 300                                        SOR00590
                I5=1                                                    SOR00600
      WRITE(2,50) A(1),A(2),I3,I4,I5,A(6),A(7),A(8),                    SOR00610
     *A(9),A(10),A(11),A(12),A(13),A(14),A(15),A(16),A(17),A(18),A(19)  SOR00620
                I4=I4+1                                                 SOR00630
                Q=I4                                                    SOR00640
                GO TO 301                                               SOR00650
300   CONTINUE                                                          SOR00660
                I5=1                                                    SOR00670
      WRITE(2,50) A(1),A(2),I3,I4,I5,A(6),A(7),A(8),                    SOR00680
     *A(9),A(10),A(11),A(12),A(13),A(14),A(15),A(16),A(17),A(18),A(19)  SOR00690
         I3=I3+1                                                        SOR00700
         I4=1                                                           SOR00710
         Q=I4                                                           SOR00720
301      CONTINUE                                                       SOR00730
200      CONTINUE                                                       SOR00740
      GO TO 010                                                         SOR00750
500   CONTINUE                                                          SOR00760
      STOP                                                              SOR00770
      END                                                               SOR00780
//GO.FT02F001 DD UNIT=3330V,MSVGP=PUB4Z,DISP=(NEW,CATLG),               SOR00790
//    SPACE=(CYL,(64,4)),DCB=(RECFM=FB,LRECL=120,BLKSIZE=12000),        SOR00800
//    DSN=MSS.S2313.QUARTER.REPORTED.DATA                               SOR00810
//GO.FT01F001 DD UNIT=3330V,MSVGP=PUB4Z,DISP=(OLD,KEEP),                SOR00820
//          DCB=(RECFM=FB,LRECL=120,BLKSIZE=12000),SPACE=(CYL,(64,4)),  SOR00830
//          DSN=MSS.S2313.REPORTED.DATA
```

Appendix H

Average Turnover Rates

Average Yearly Turnover by Ship Type

SHIP TYPE	COMBATANT	AUXILIARY	SUBMARINE	CARRIER	AMPHIBIOUS
Turnover	1.519	1.554	1.587	1.342	1.44
Std. Dev	.166	.110	.163	.079	.115
N	14	14	2	4	7

Quarterly and Average Yearly Turnover Rates by UIC

UIC	FISCAL YEAR AND QUARTER										AVG YR
	801	802	803	804	811	812	813	814	821	822	
02534	.439	.475	.182	.292	.243	.341	.463	.560	.329	.414	1.500
02538	.324	.297	.486	.378	.243	.554	.581	.594	.189	.486	1.729
03128	.269	.410	.305	.290	.316	.472	.338	.392	.323	.432	1.398
03129	.189	.328	.324	.317	.262	.598	.200	.379	.240	.423	1.301
03341	.284	.428	.326	.337	.360	.476	.311	.428	.352	.416	1.477
03343	.282	.328	.309	.268	.290	.421	.329	.348	.323	.363	1.289
03359	.297	.395	.306	.344	.334	.462	.347	.463	.381	.383	1.322
03368	.276	.280	.321	.269	.271	.392	.307	.441	.345	.376	1.280
04621	.406	.427	.271	.456	.292	.424	.343	.430	.377	.530	1.526
04628	.423	.347	.439	.689	.196	.334	.305	.598	.471	.508	1.667
04637	.343	.470	.480	.383	.409	.384	.368	.390	.363	.405	1.613
04665	.236	.587	.346	.406	.938	.449	.394	.536	.417	.547	1.940
04666	.381	.344	.289	.463	.333	.418	.285	.433	.266	.348	1.473
04674	.309	.387	.273	.305	.348	.326	.412	.458	.387	.461	1.409
04689	.402	.503	.769	.412	.350	.373	.285	.453	.393	.393	1.773
04698	.289	.323	.352	.304	.309	.420	.255	.458	.420	.589	1.355

UIC	FISCAL YEAR AND QUARTER										AVG YR
	801	802	803	804	811	812	813	814	821	822	
04951	.378	.502	.426	.371	.338	.378	.295	.353	.320	.371	1.520
05604	.353	.662	.309	.162	.397	.441	.559	.618	.420	.368	1.750
05833	.309	.401	.306	.370	.453	.440	.338	.433	.363	.469	1.525
05836	.456	.343	.368	.384	.289	.516	.264	.343	.419	.478	1.481
05847	.341	.333	.314	.364	.283	.310	.314	.302	.375	.391	1.280
07183	.342	.353	.339	.285	.299	.467	.353	.485	.339	.402	1.461
07351	.268	.418	.381	.381	.338	.466	.402	.455	.266	.280	1.554
08808	.337	.387	.328	.337	.340	.440	.354	.421	.295	.375	1.472
08809	.318	.318	.292	.325	.345	.417	.327	.493	.352	.443	1.417
20012	.325	.310	.374	.377	.377	.366	.377	.501	.355	.456	1.503
20050	.268	.321	.434	.326	.365	.356	.375	.585	.570	.409	1.337
20058	.281	.352	.290	.372	.381	.472	.357	.519	.310	.510	1.512
20112	.336	.444	.328	.377	.406	.526	.436	.470	.380	.470	1.661
20123	.335	.380	.383	.328	.351	.306	.264	.490	.370	.438	1.418
20143	.318	.325	.369	.304	.296	.419	.427	.477	.361	.456	1.467
20223	.284	.390	.461	.432	.343	.420	.361	.550	.521	.544	1.620
20576	.342	.422	.322	.386	.342	.338	.330	.410	.354	.370	1.446
20632	.291	.297	.373	.363	.407	.444	.300	.457	.372	.333	1.466
20642	.370	.304	.361	.323	.351	.408	.256	.475	.313	.456	1.424
52198	.321	.367	.364	.410	.383	.387	.325	.398	.364	.498	1.477
52234	.280	.363	.379	.312	.292	.395	.257	.486	.408	.389	1.382
52686	.276	.384	.406	.488	.250	.371	.384	.429	.338	.377	1.494
52699	.373	.342	.263	1.049	.339	.348	.301	.408	.376	.339	1.711
52700	.250	.379	.303	.265	.372	.425	.279	.408	.346	.415	1.340
54057	.275	.408	.436	.374	.322	.351	.313	.484	.332	.460	1.481
54064	.323	.338	.400	.318	.381	.386	.376	.478	.415	.362	1.500

Appendix I

Final Data Set

The final data set utilized for analysis is described below. The ships were selected in a manner to insure adequate representation of various ship classes and missions of today's Naval forces, but were randomly selected within the subgroups to prevent inadvertant biases in the data. Although STF data was available from the fourth quarter of FY 1977 until the second quarter of FY 1982, CASREP data was only available for FY 1980 to second quarter of FY 1982.

DATA ELEMENT	POSITION	LENGTH
Unit Identification Code *	4	5
Ship Type *	12	1
Ship Class *	20	2
Ship Subclass *	28	2
Size (Personnel) *	36	1
Age *	44	1
Correlation Coefficient	52	8
Downtime (Days)	60	4
Turnover	68	8

* The coding of these data elements was discussed in Appendix E.

Appendix J

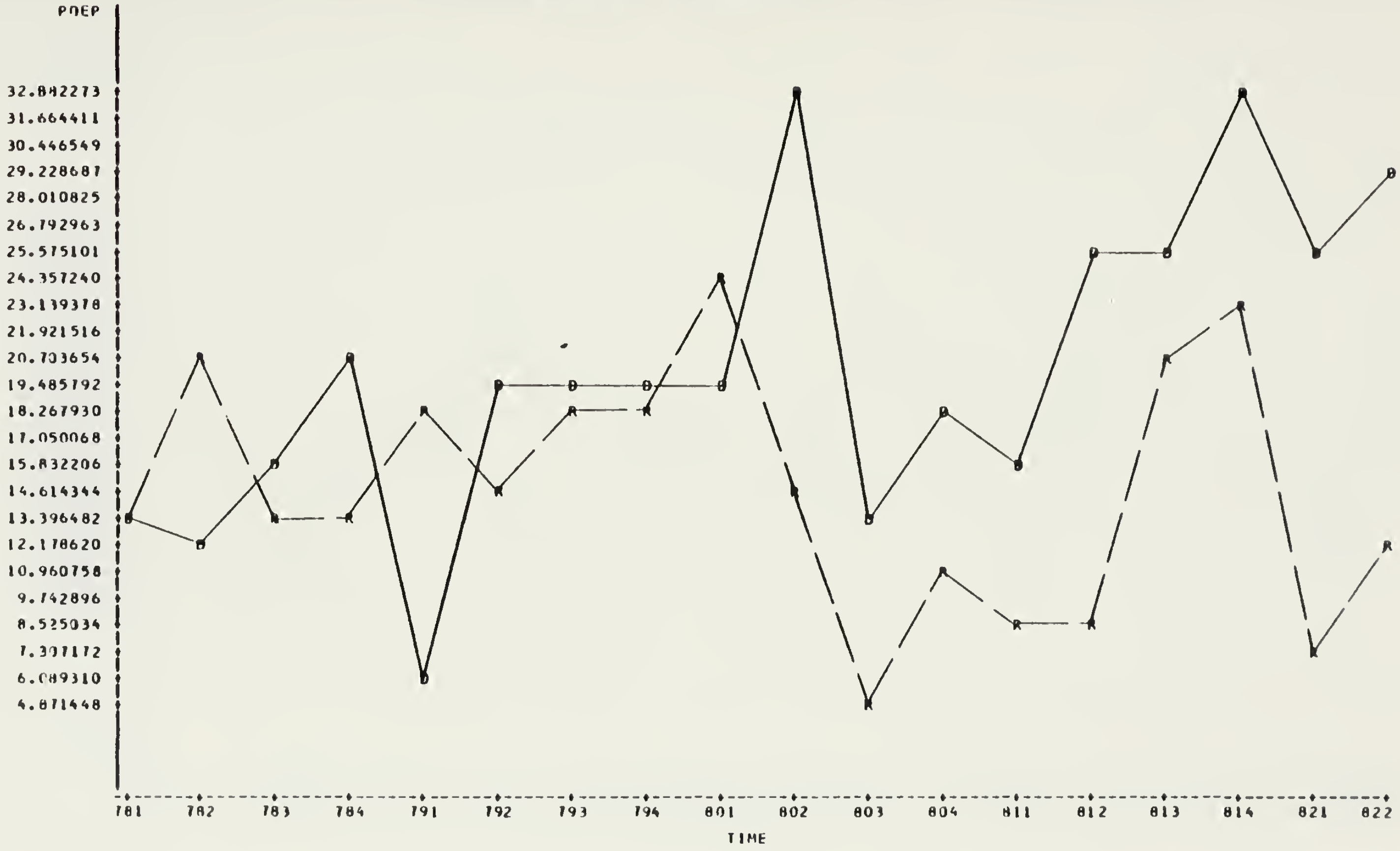
Graphs of Percentage of Reporters and Leavers by UIC

The graphs contained in this appendix portray the percentage of personnel who report to and leave from a ship contained in the sample. The solid line connecting the "D" in the graph depicts the changes in the percentage of departers. Likewise, the dashed line connecting the "R" in the graph depicts the reporters.

STATISTICAL ANALYSIS SYSTEM

UIC=02534

PLOT OF PDEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R

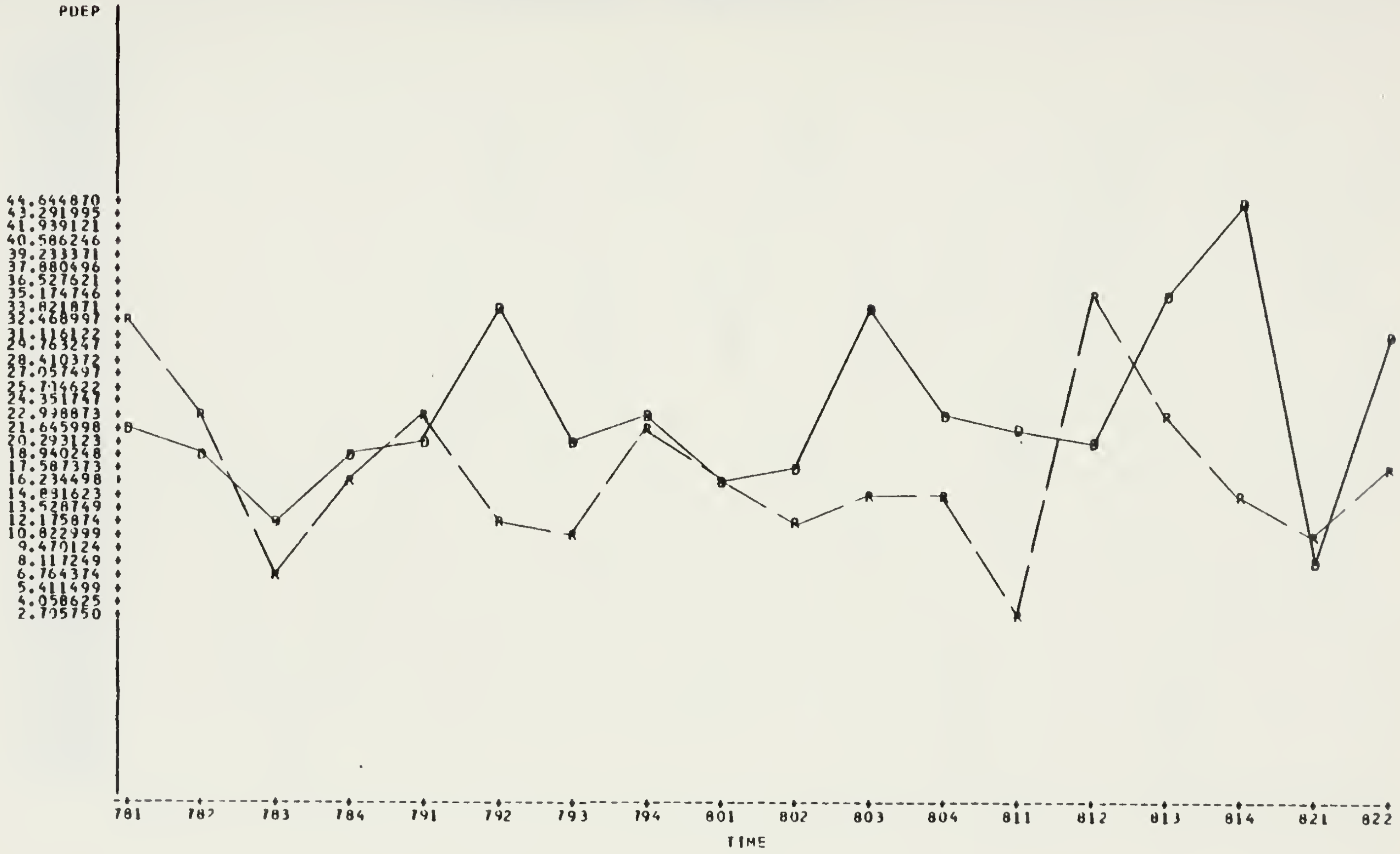


ARS 39 CONSERVER

STATISTICAL ANALYSIS SYSTEM

UIC=02530

PLOT OF PDEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R

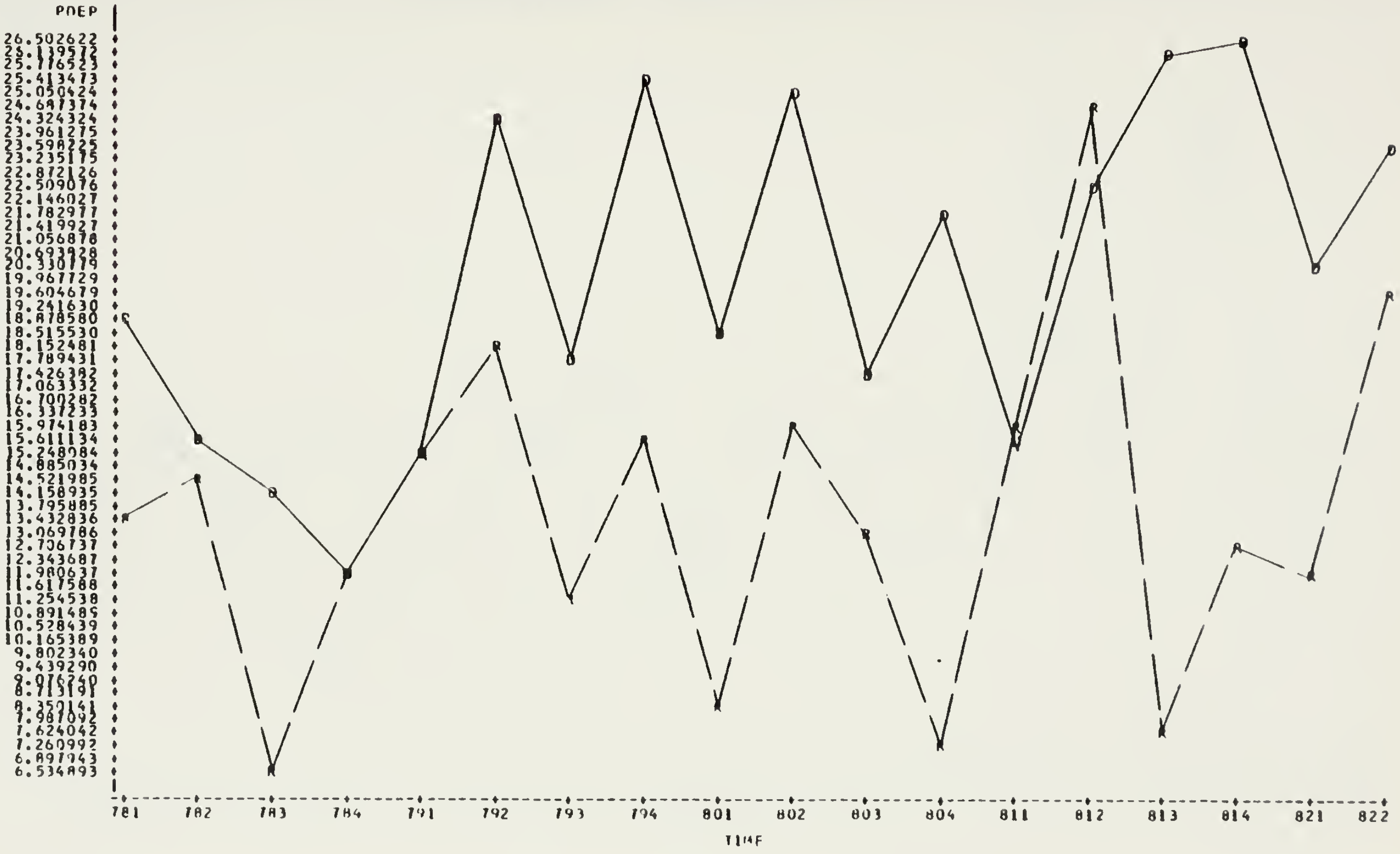


ARS 43 RECOVERY

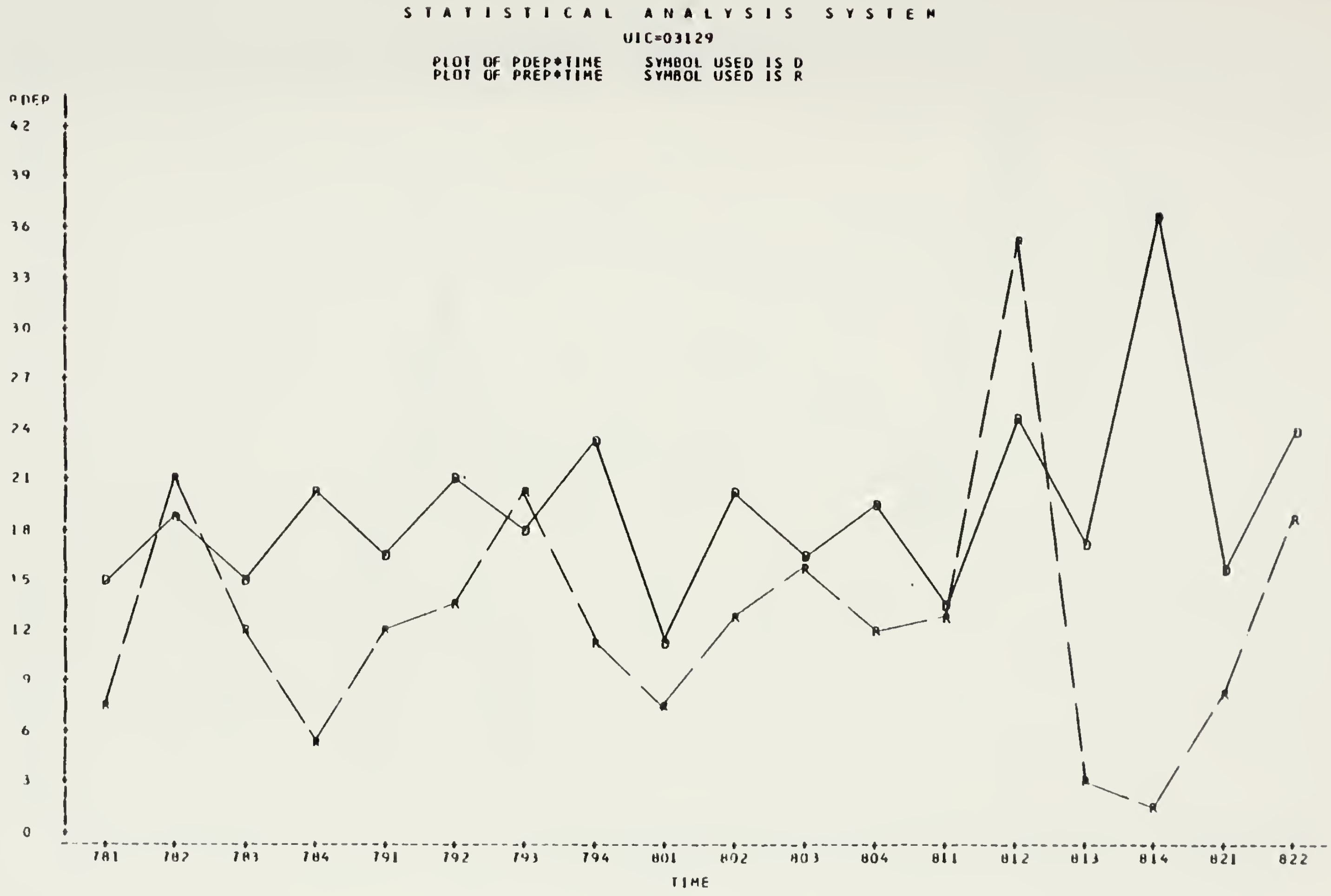
S T A T I S T I C A L   A N A L Y S I S   S Y S T E M

UIC=03128

PLOT OF PDEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R



LSD 28 THOMASTON

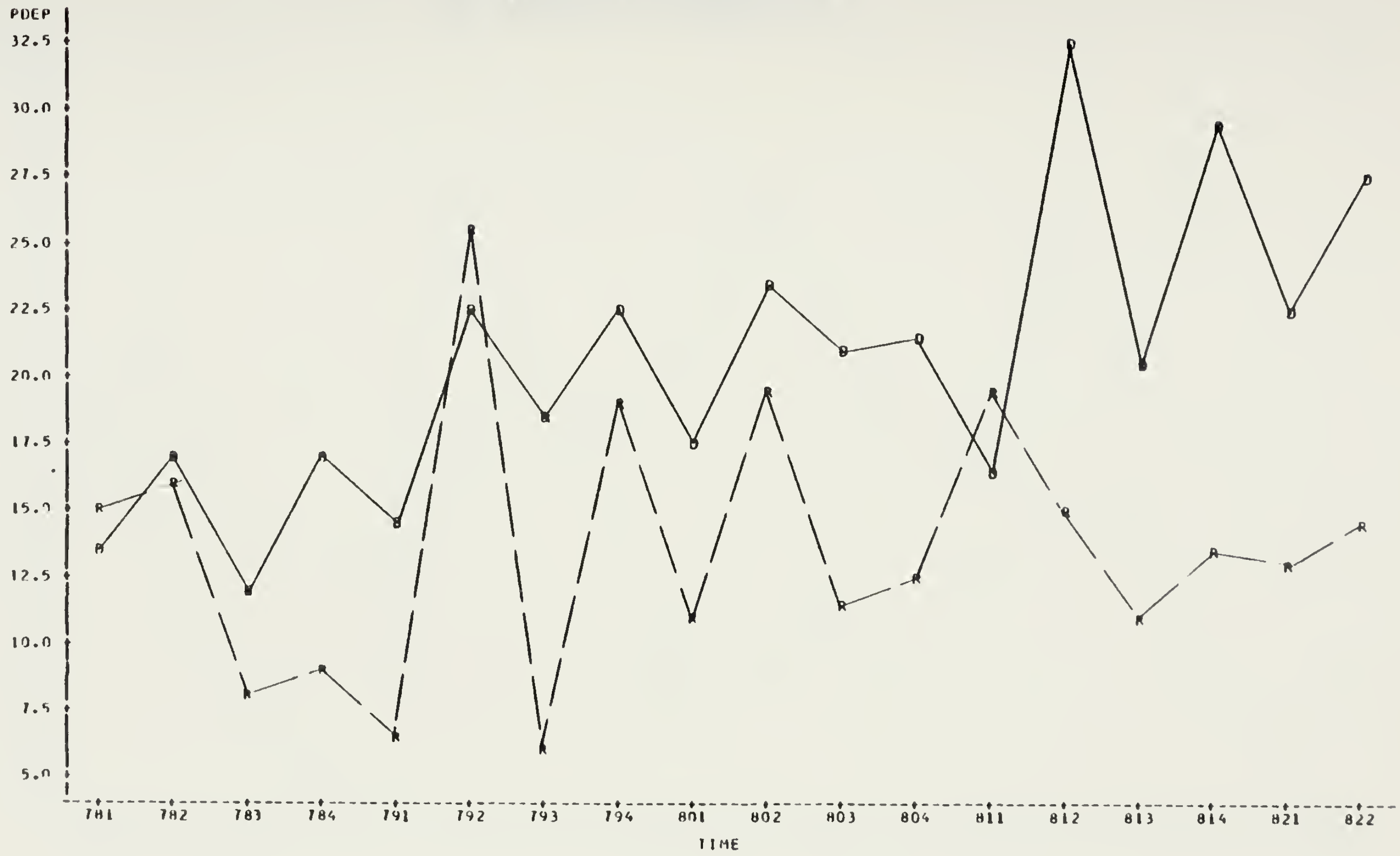


LSD 29 PLYMOUTH ROCK

STATISTICAL ANALYSIS SYSTEM

UIC=03341

PLOT OF PDEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R

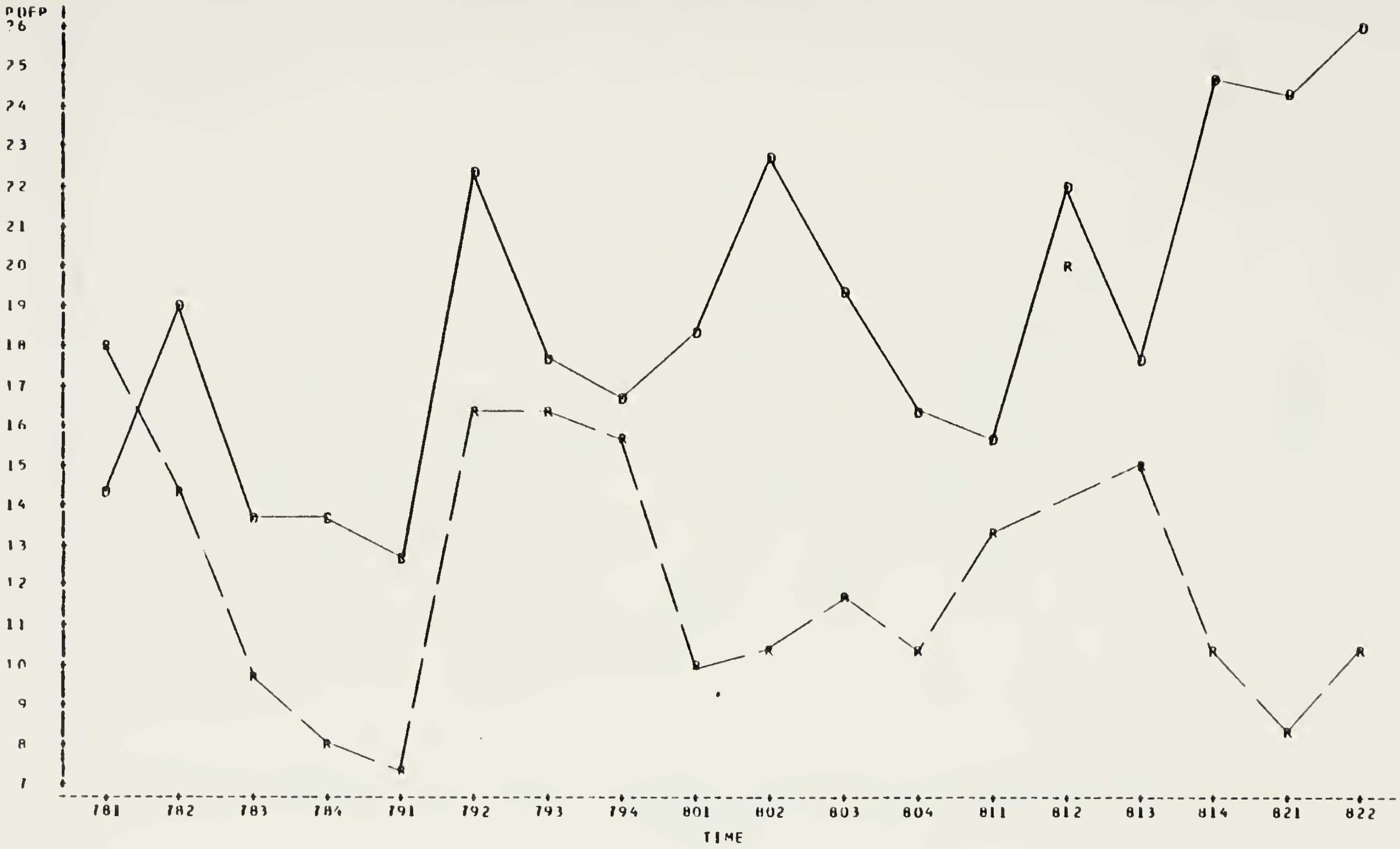


CV 41 MIDWAY

S T A T I S T I C A L   A N A L Y S I S   S Y S T E M

UIC=03343

PLOT OF PDEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R

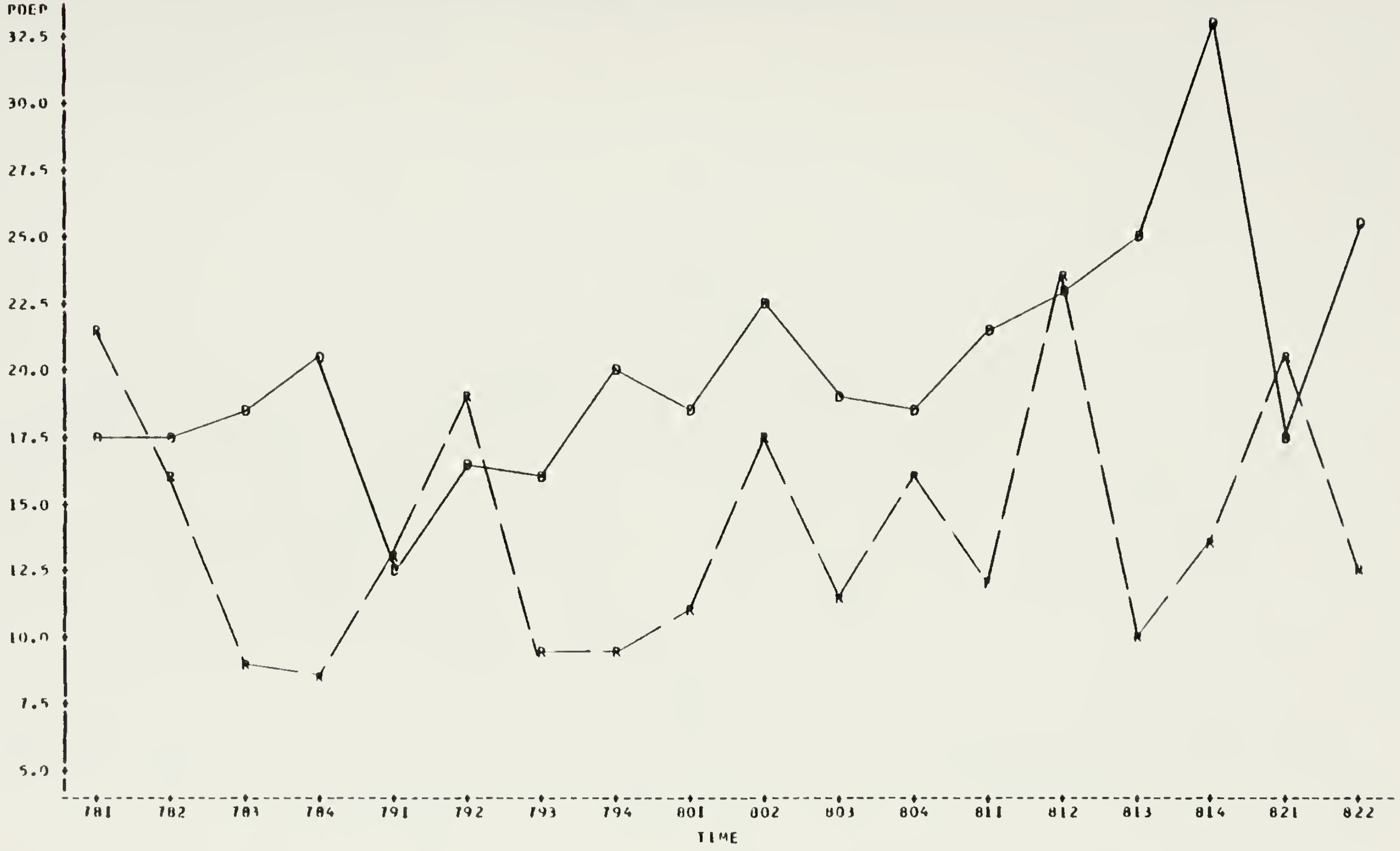


CV 43 CORAL SEA

S T A T I S T I C A L   A N A L Y S I S   S Y S T E M

UIC=03359

PLOT OF PDEP*TIME   SYMBOL USED IS D
PLOT CF PREP*TIME   SYMBOL USED IS R

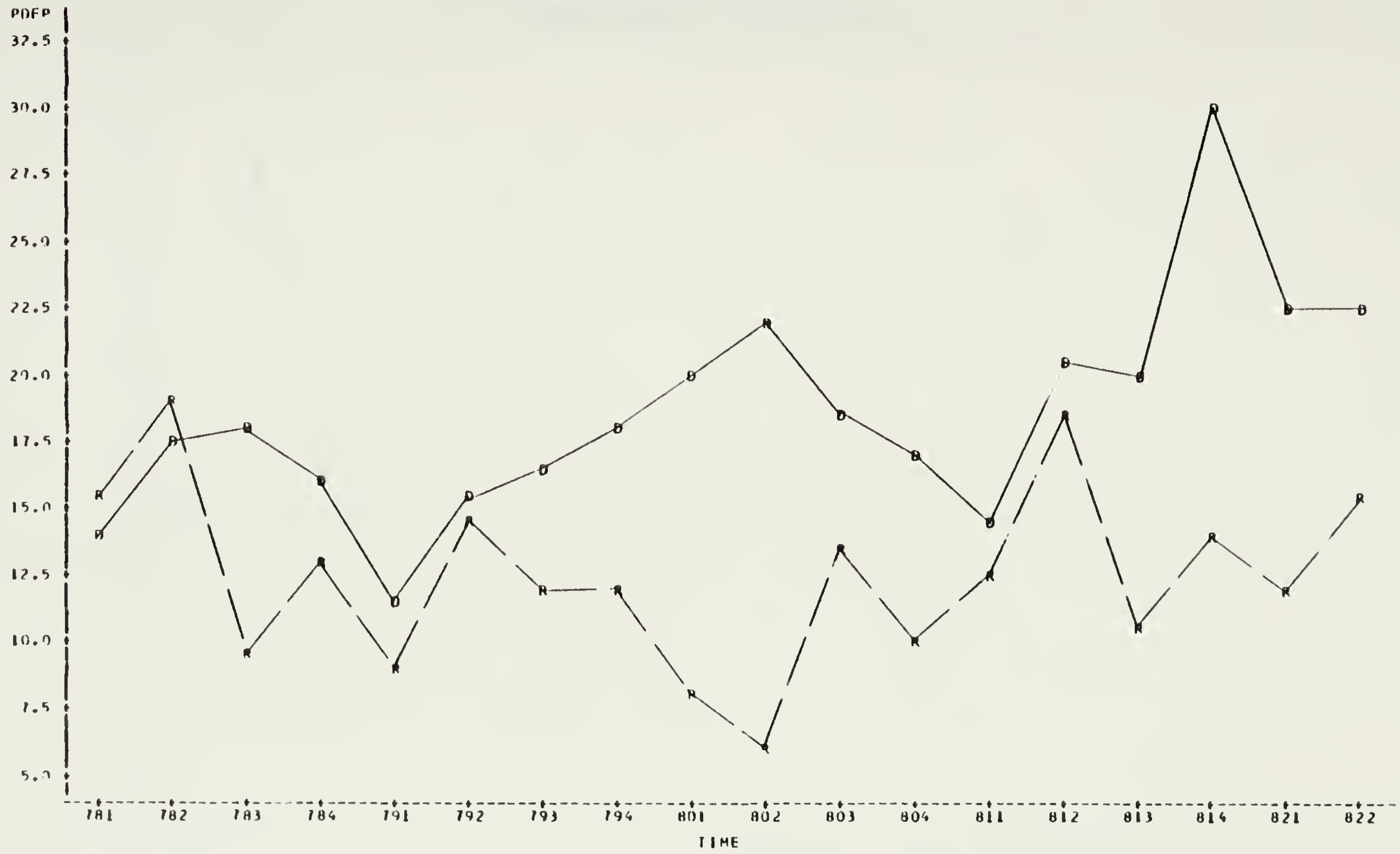


CV 59 FORRESTAL

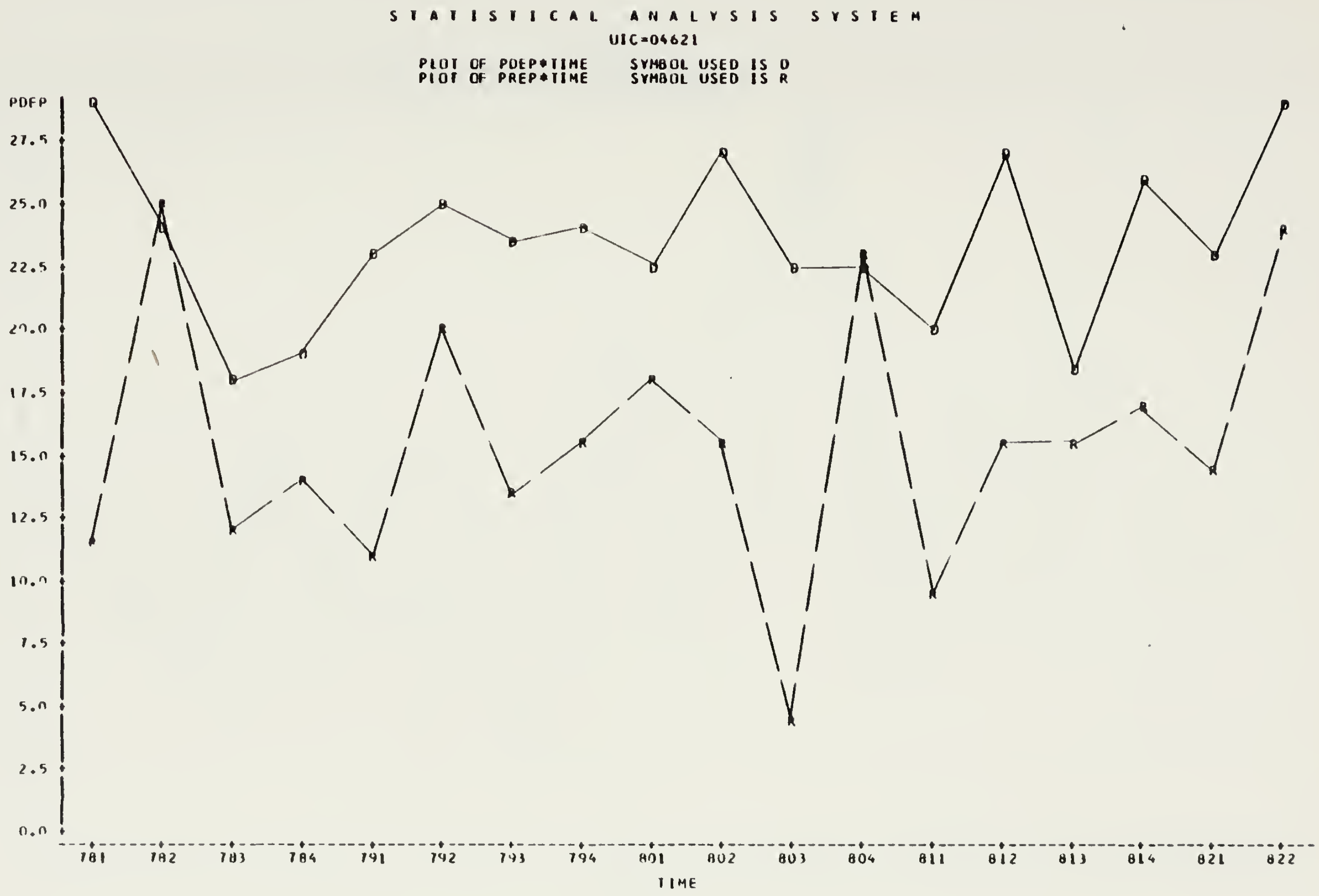
S T A T I S T I C A L   A N A L Y S I S   S Y S T E M

UIC=03368

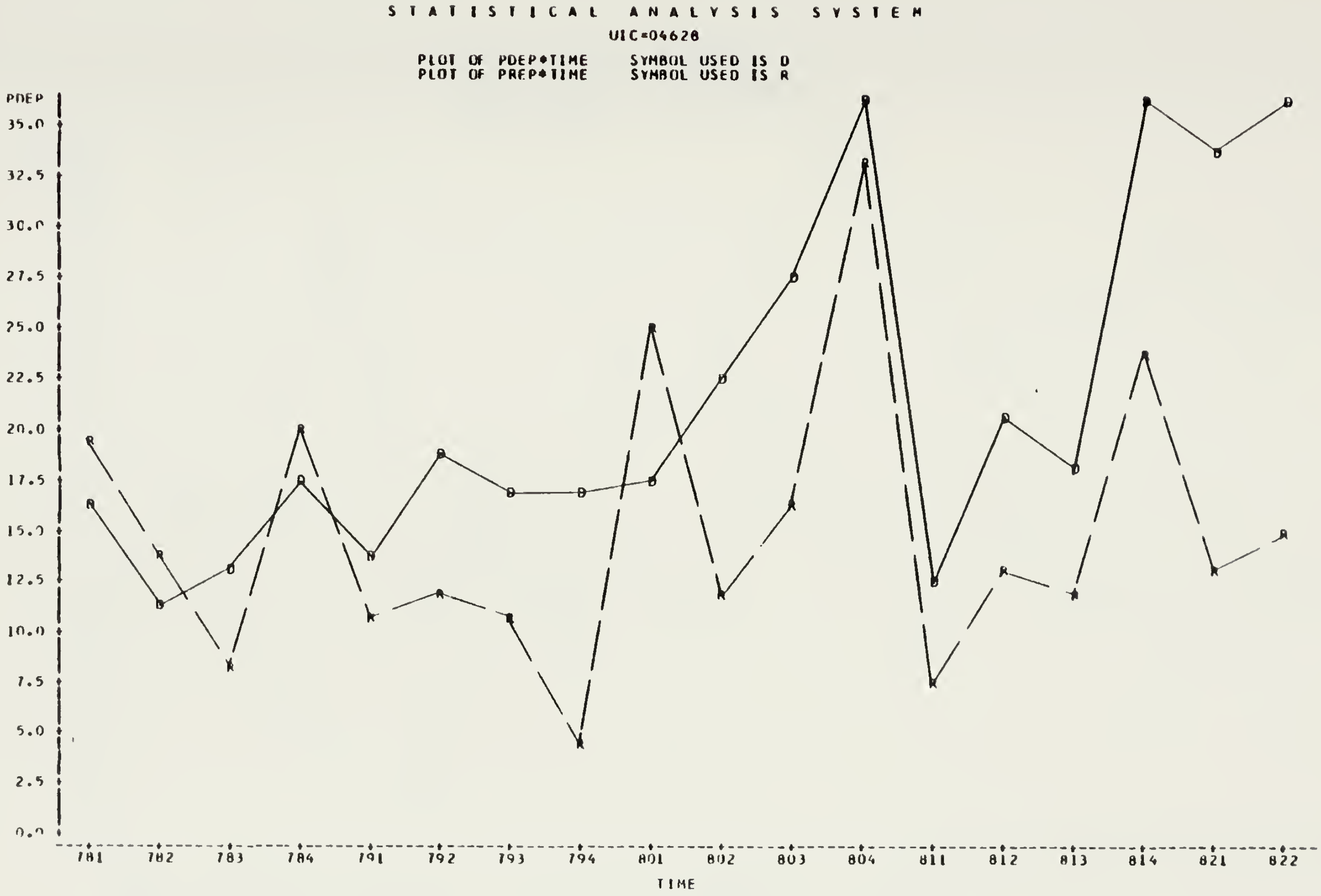
PLOT OF PDEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R



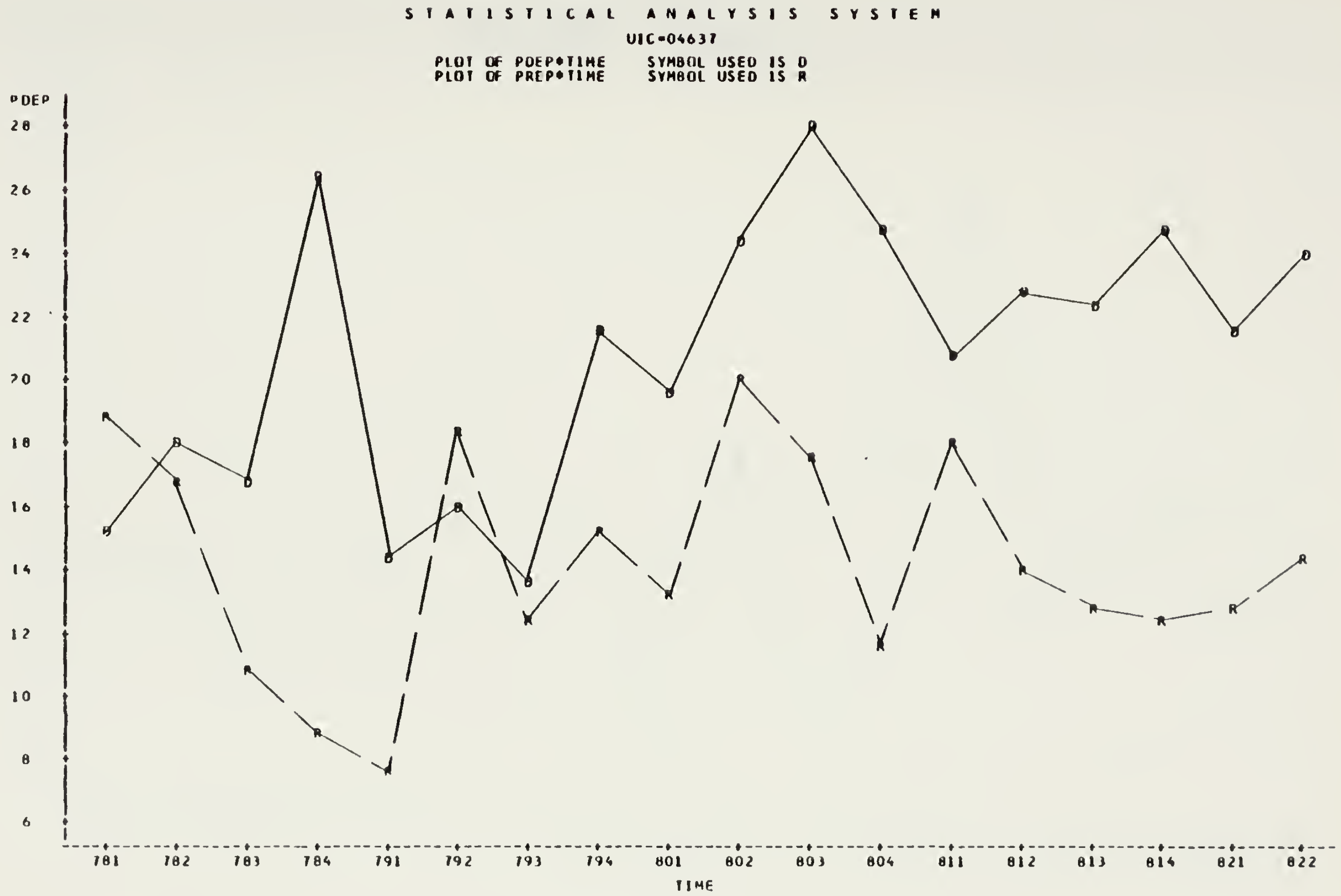
CVN 68 NIMITZ


S T A T I S T I C A L   A N A L Y S I S   S Y S T E M
UIC=04621
PLOT OF PDEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R
PDEP
27.5
25.0
22.5
20.0
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
781
782
783
784
791
792
793
794
801
802
803
804
811
812
813
814
821
822
TIME

AS 12 SPERRY


STATISTICAL ANALYSIS SYSTEM
UIC=04628
PLOT OF PDEP*TIME SYMBOL USED IS D
PLOT OF PREP*TIME SYMBOL USED IS R
PDEP
35.0
32.5
30.0
27.5
25.0
22.5
20.0
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
781
782
783
784
791
792
793
794
801
802
803
804
811
812
813
814
821
822
TIME

AS 18 ORION

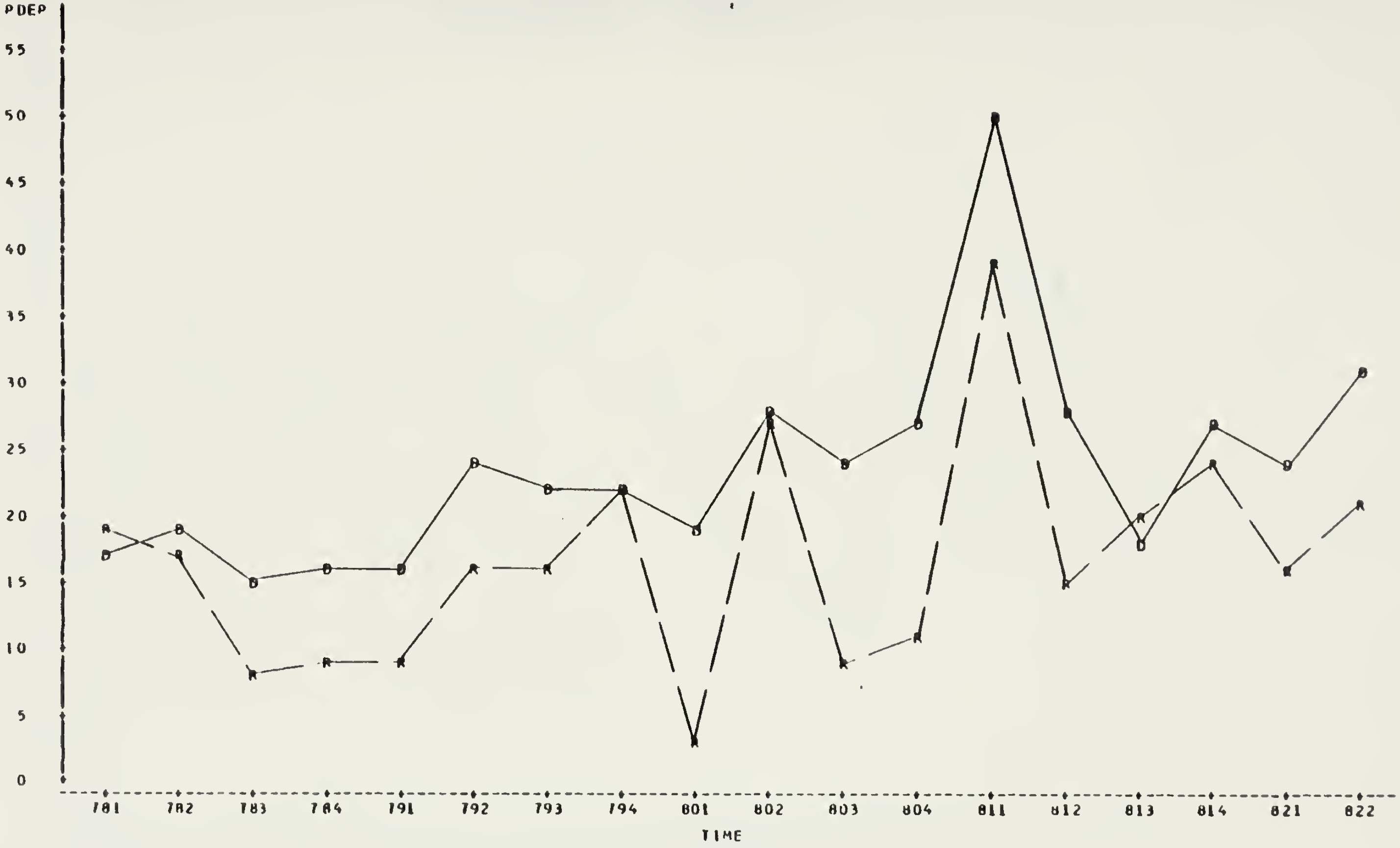


AD 17 PIEDMONT

STATISTICAL ANALYSIS SYSTEM

UIC=04665

PLOT OF PDEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R

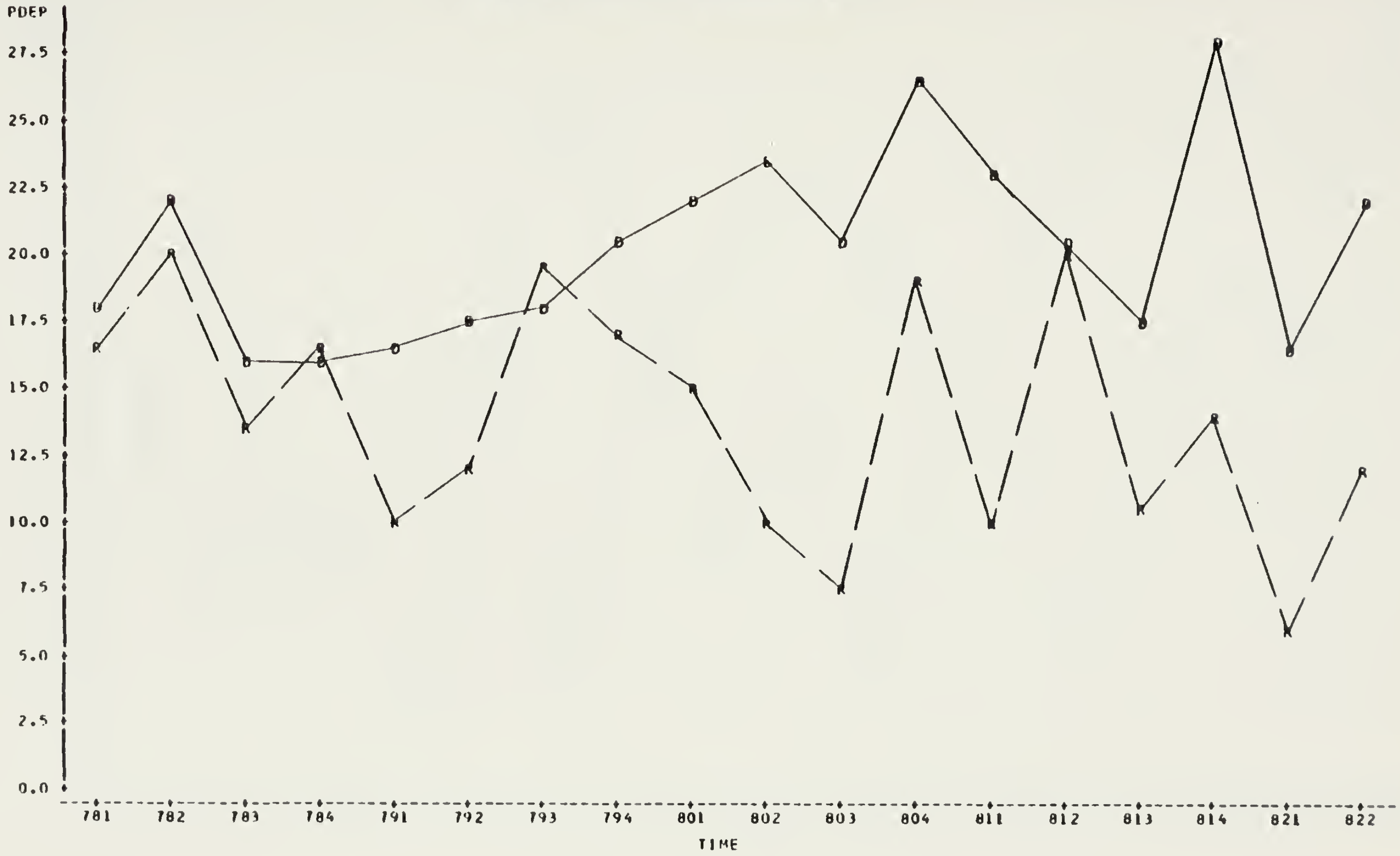


DDG 33 PARSONS

STATISTICAL ANALYSIS SYSTEM

UIC=04666

PLOT OF PDEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R

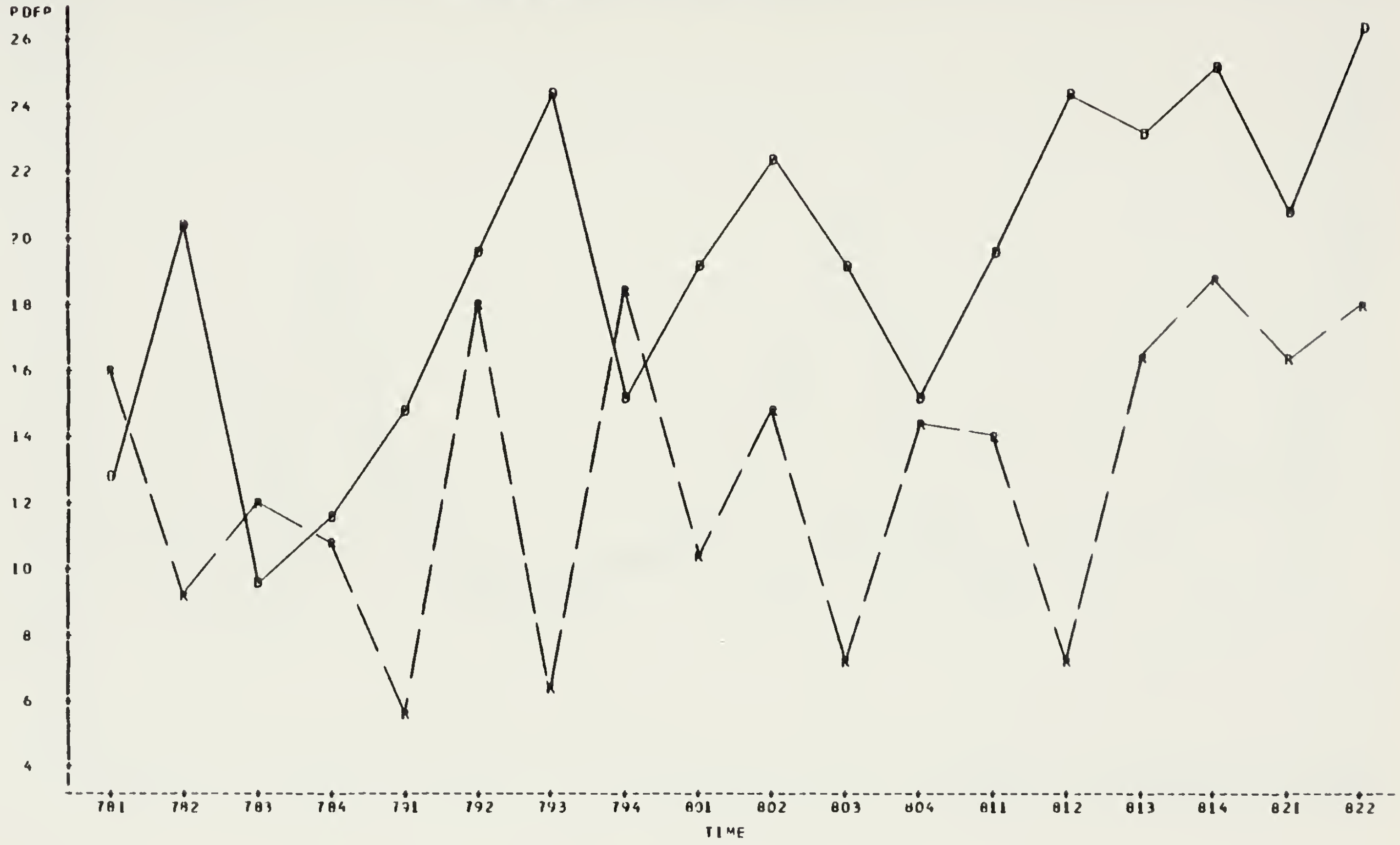


DD 950 RICHARD EDWARDS

S T A T I S T I C A L   A N A L Y S I S   S Y S T E M

UIC=04674

PLOT OF PDEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R

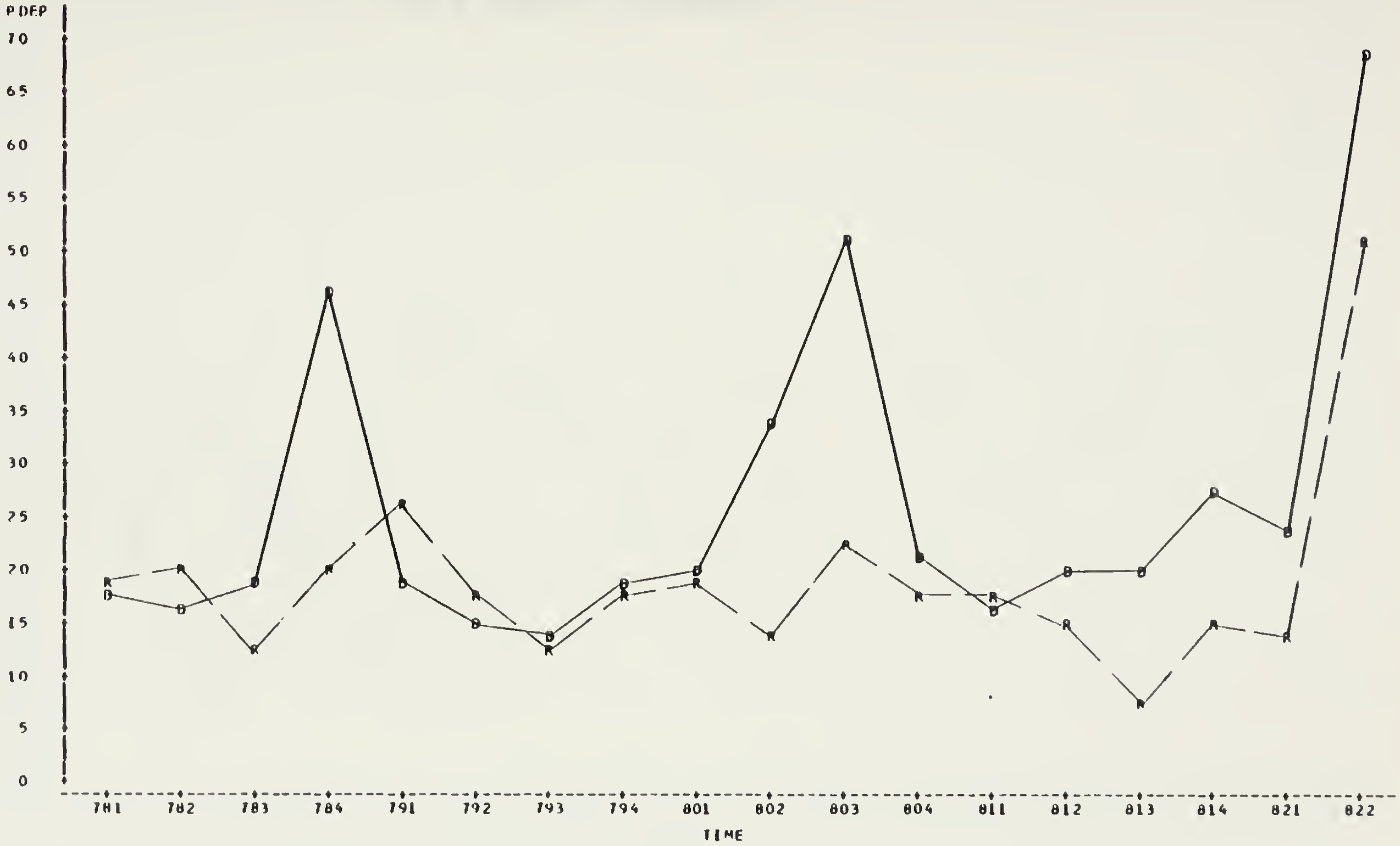


DDG 8 LYNDE MCCORMICK

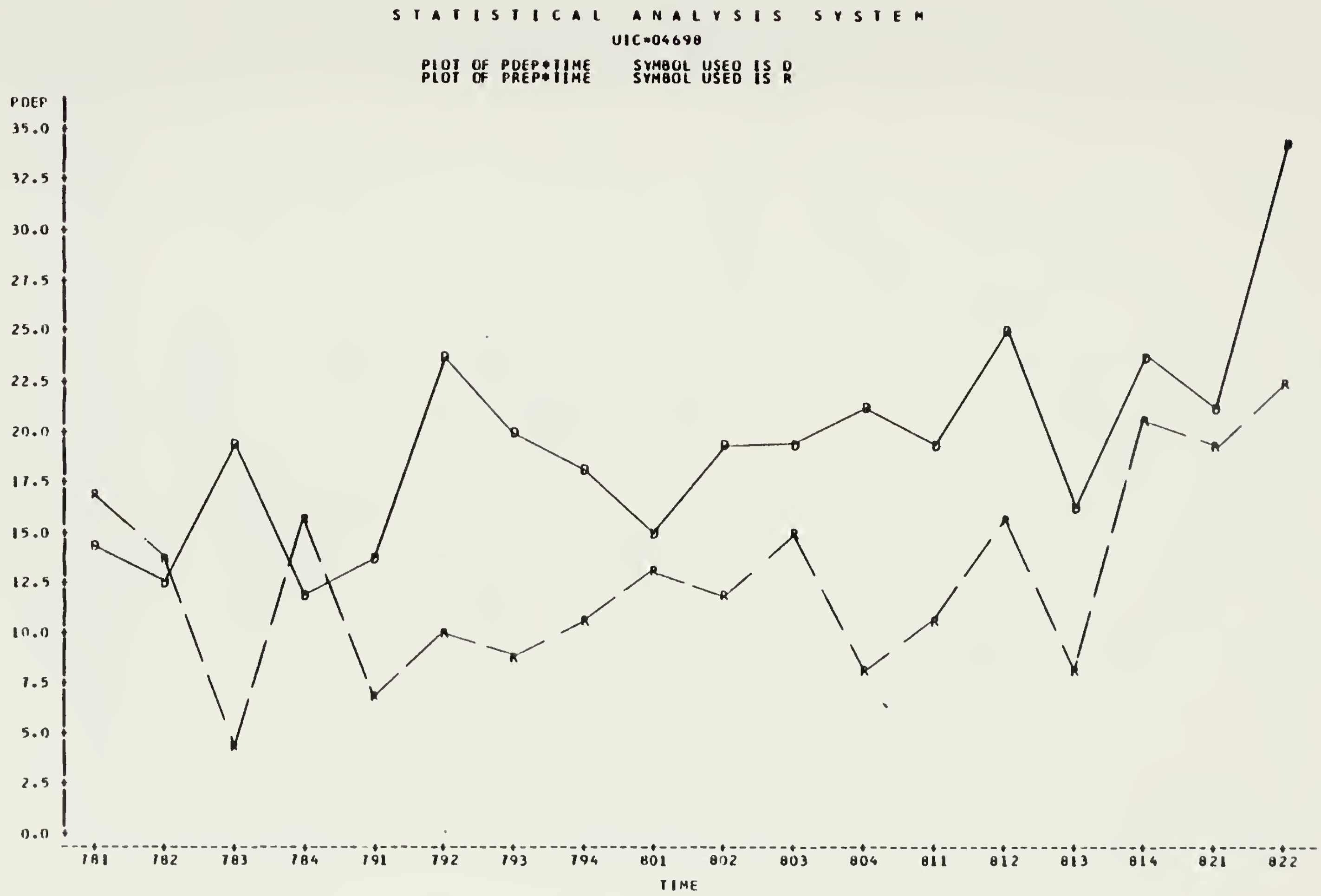
STATISTICAL ANALYSIS SYSTEM

UIC=04689

PLOT OF POEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R



AS 31 HUNLEY

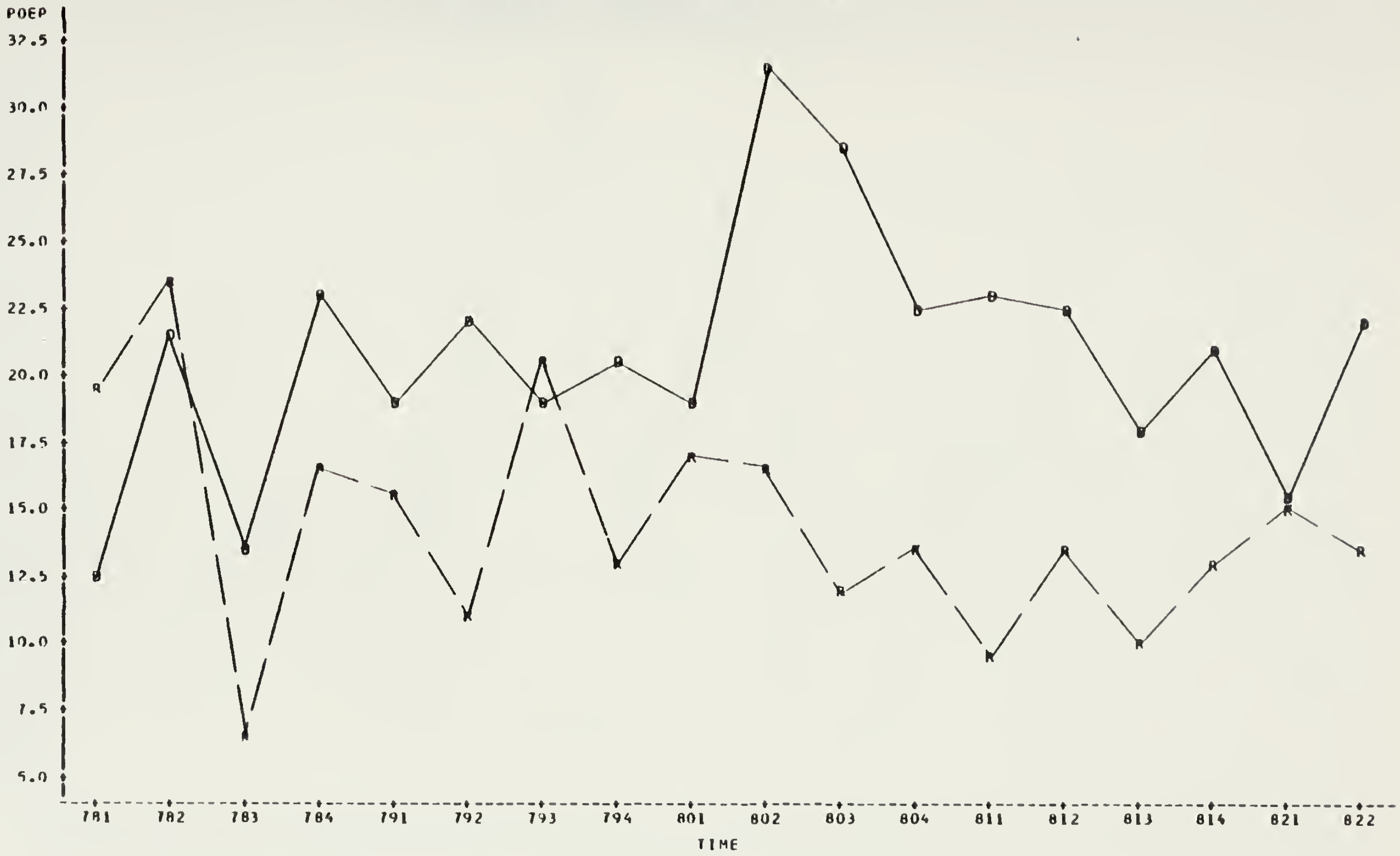


FFG 5 RICHARD L PAGE

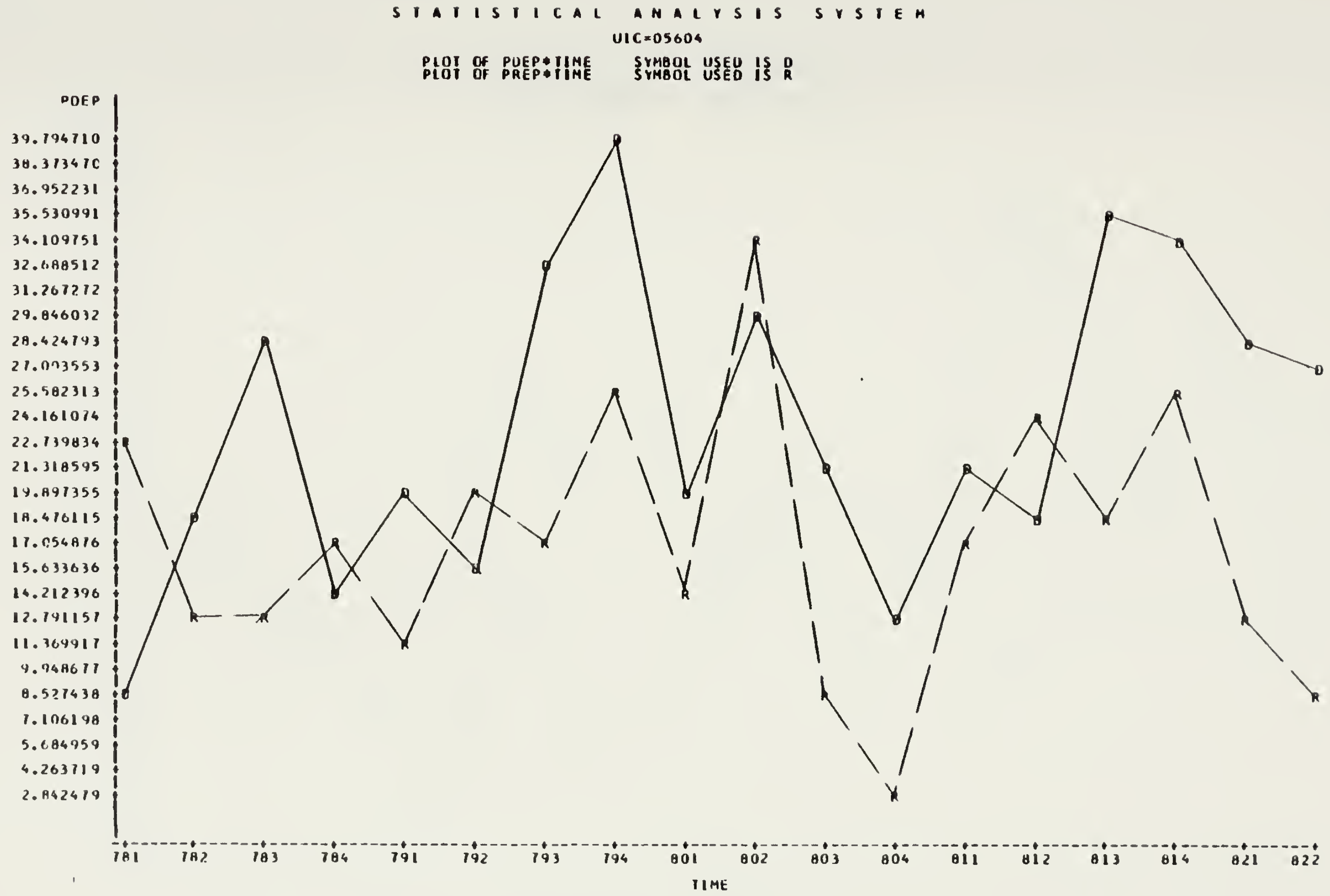
STATISTICAL ANALYSIS SYSTEM

UIC=04951

PLOT OF POEP*TIME SYMBOL USED IS D
PLOT OF PREP*TIME SYMBOL USED IS R



AO 51 ASHTABULA

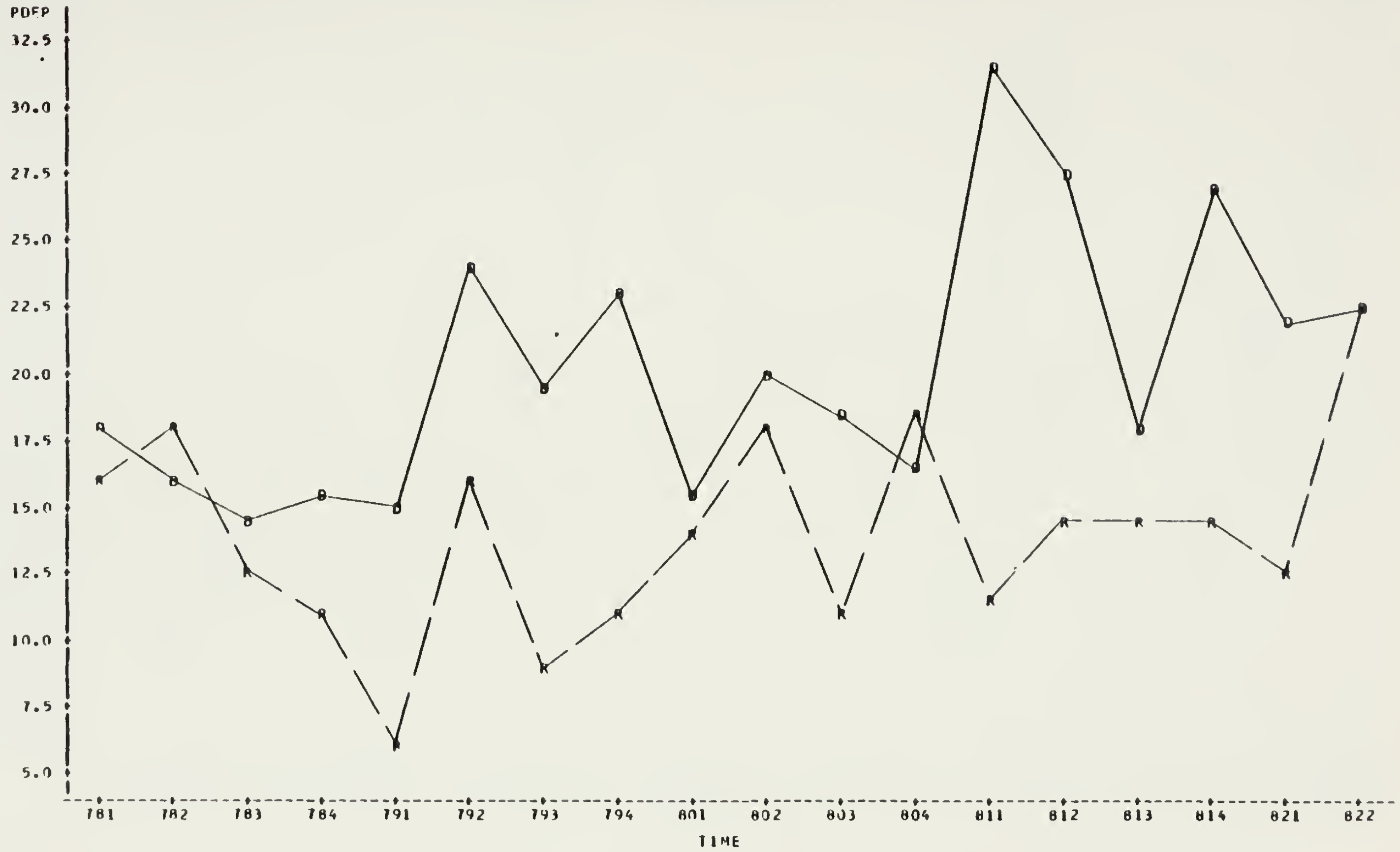


SS 581 BLUEBACK

S T A T I S T I C A L   A N A L Y S I S   S Y S T E M

UIC=05833

PLOT OF PDEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R

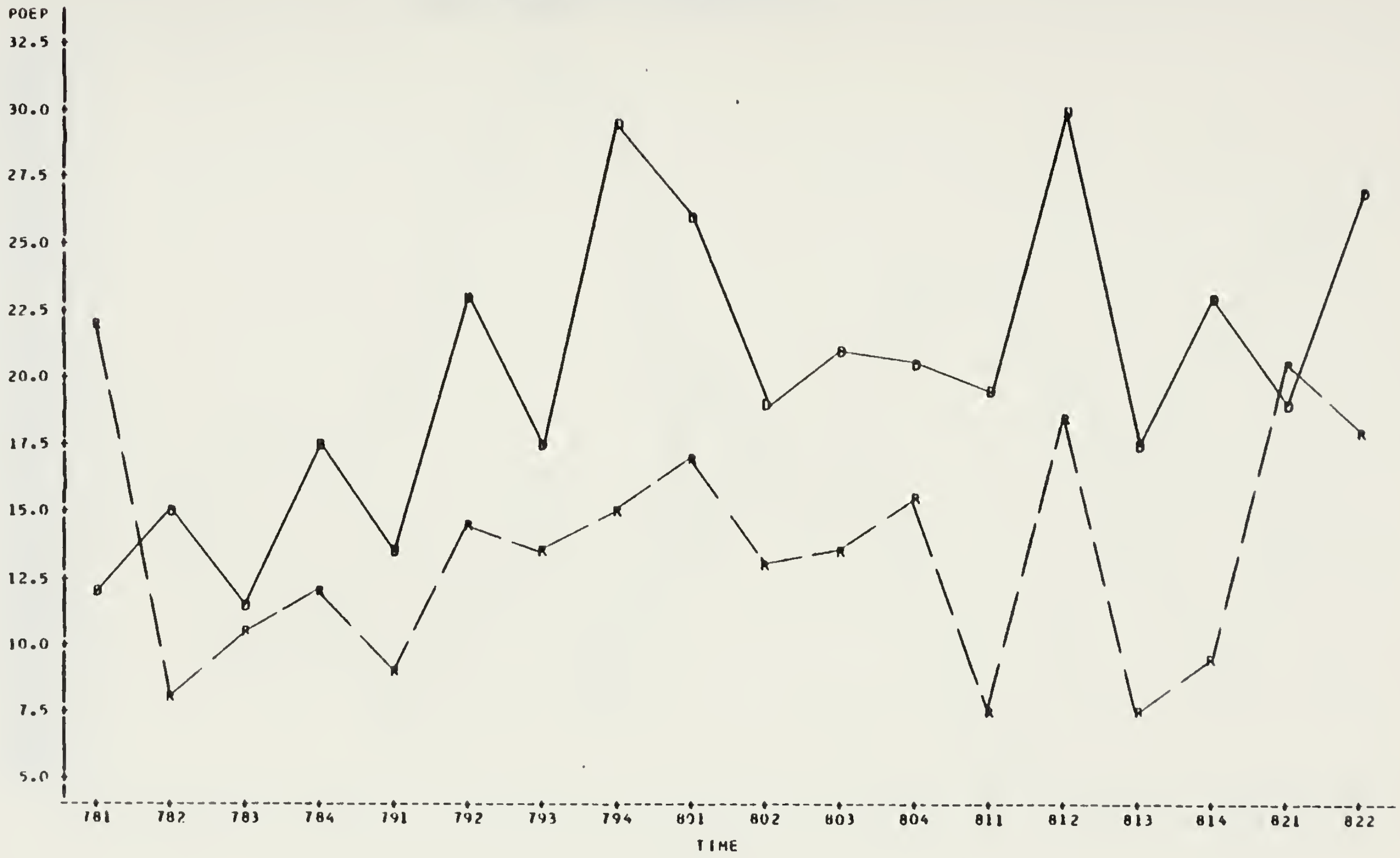


AOE 2 CAMDEN

STATISTICAL ANALYSIS SYSTEM

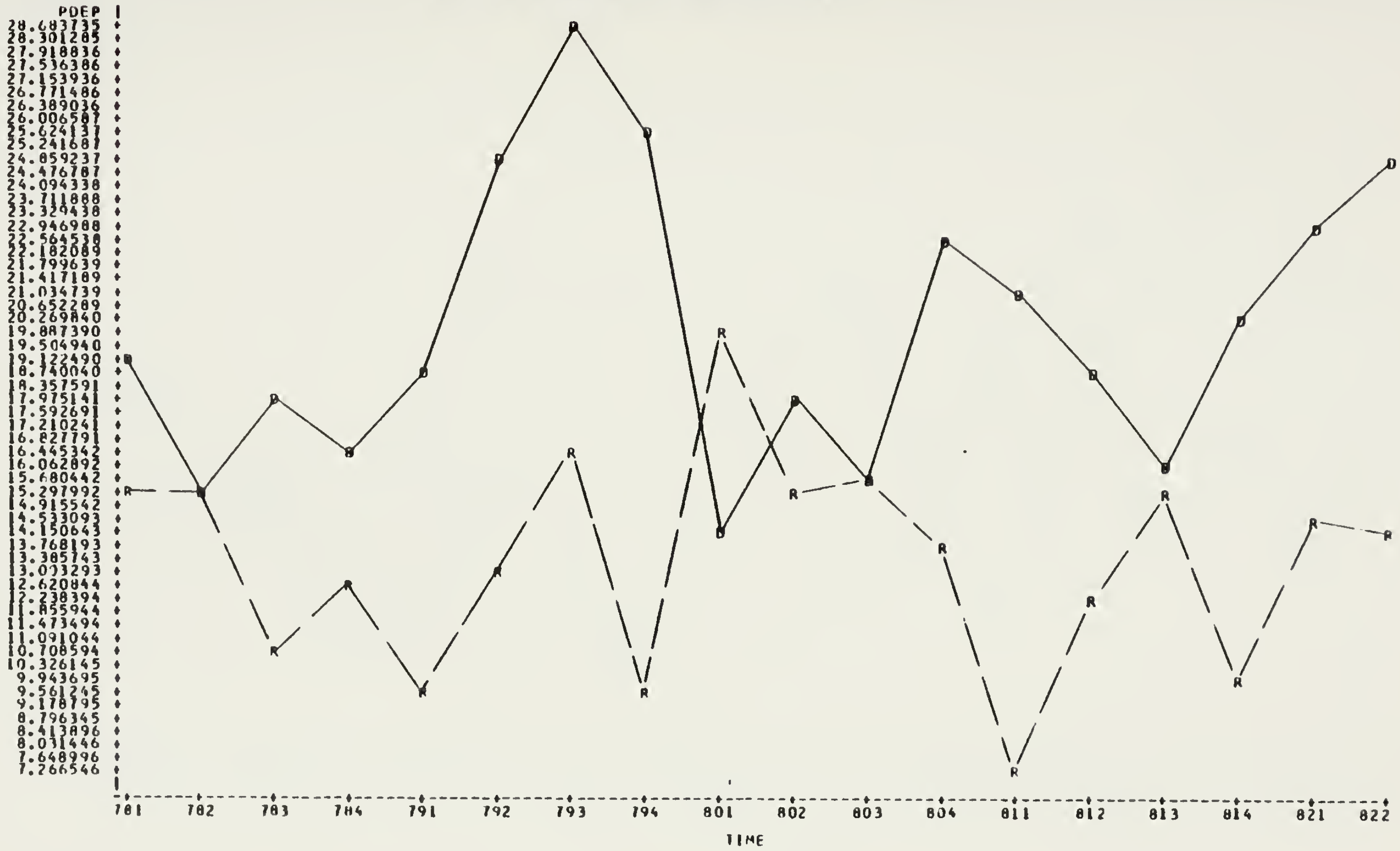
UIC=05836

PLOT OF PDEP*TIME SYMBOL USED IS D
PLOT OF PREP*TIME SYMBOL USED IS R

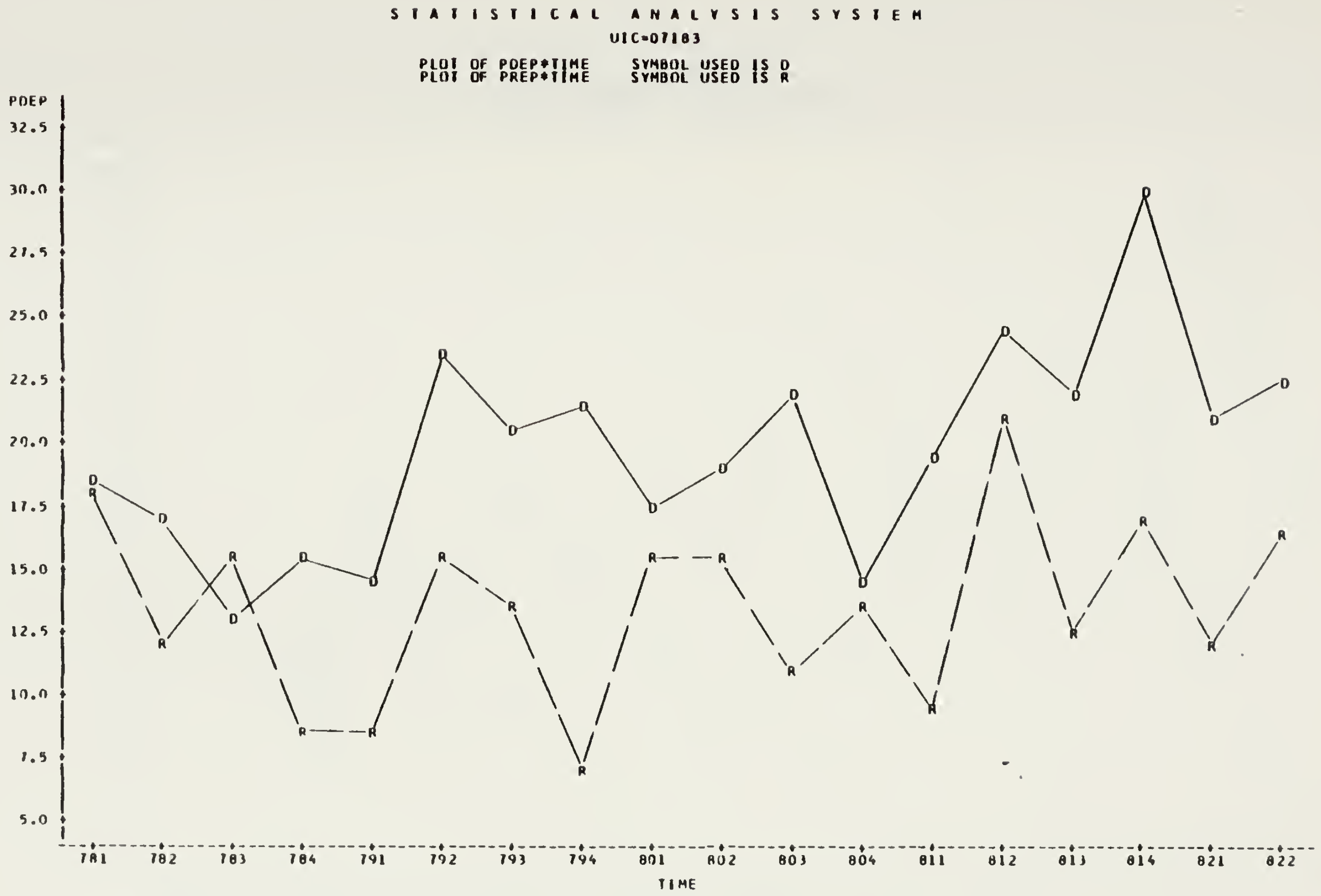


AFS 5 CONCORD

```
S T A T I S T I C A L   A N A L Y S I S   S Y S T E M
                      UIC=05847
PLOT OF PDEP*TIME     SYMBOL USED IS D
PLOT CF PREP*TIME     SYMBOL USED IS R
```



LKA 116 ST LOUIS


S T A T I S T I C A L   A N A L Y S I S   S Y S T E M
UIC=07183
PLOT OF PDEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R
PDEP
32.5
30.0
27.5
25.0
22.5
20.0
17.5
15.0
12.5
10.0
7.5
5.0
781
782
783
784
791
792
793
794
801
802
803
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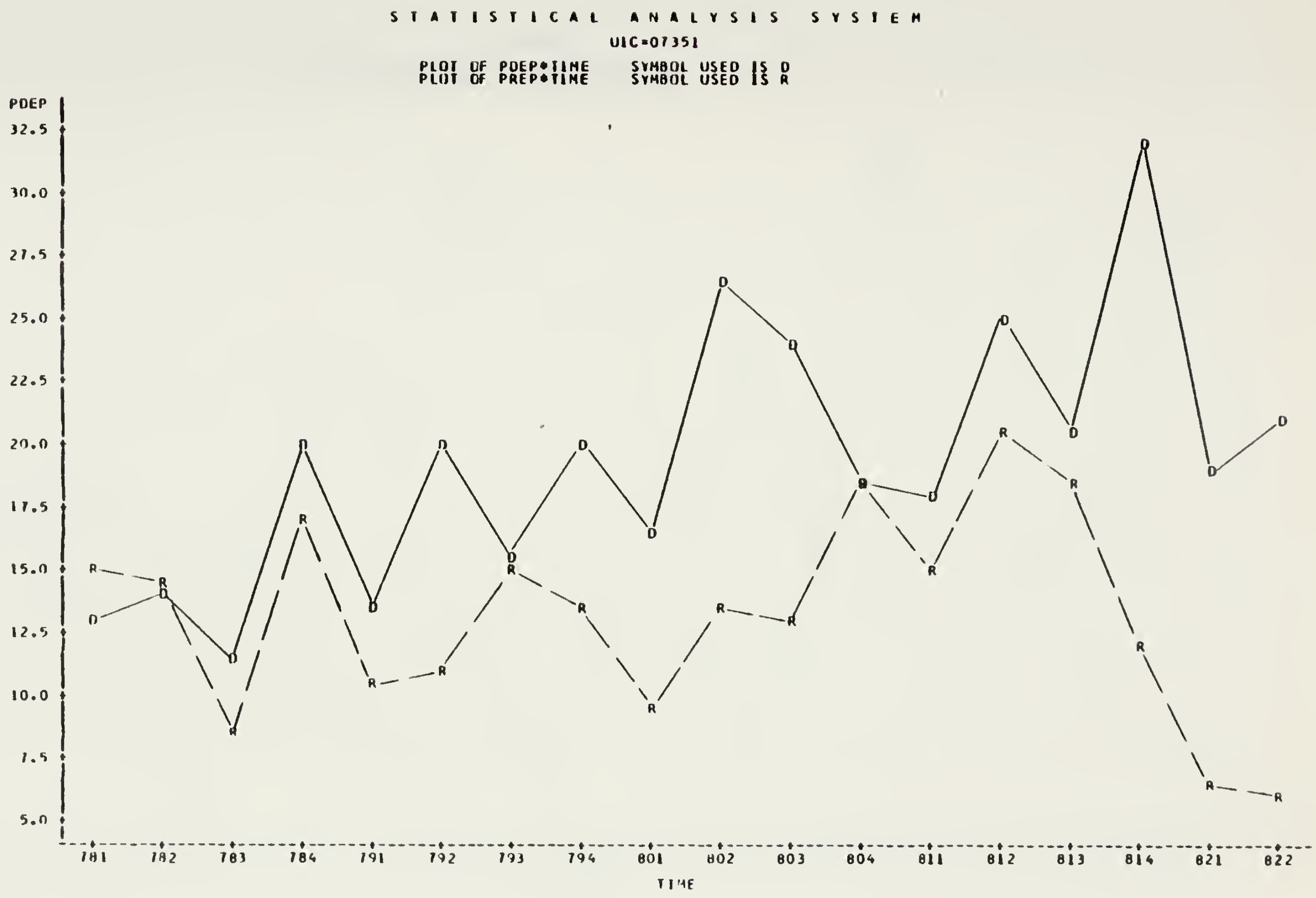
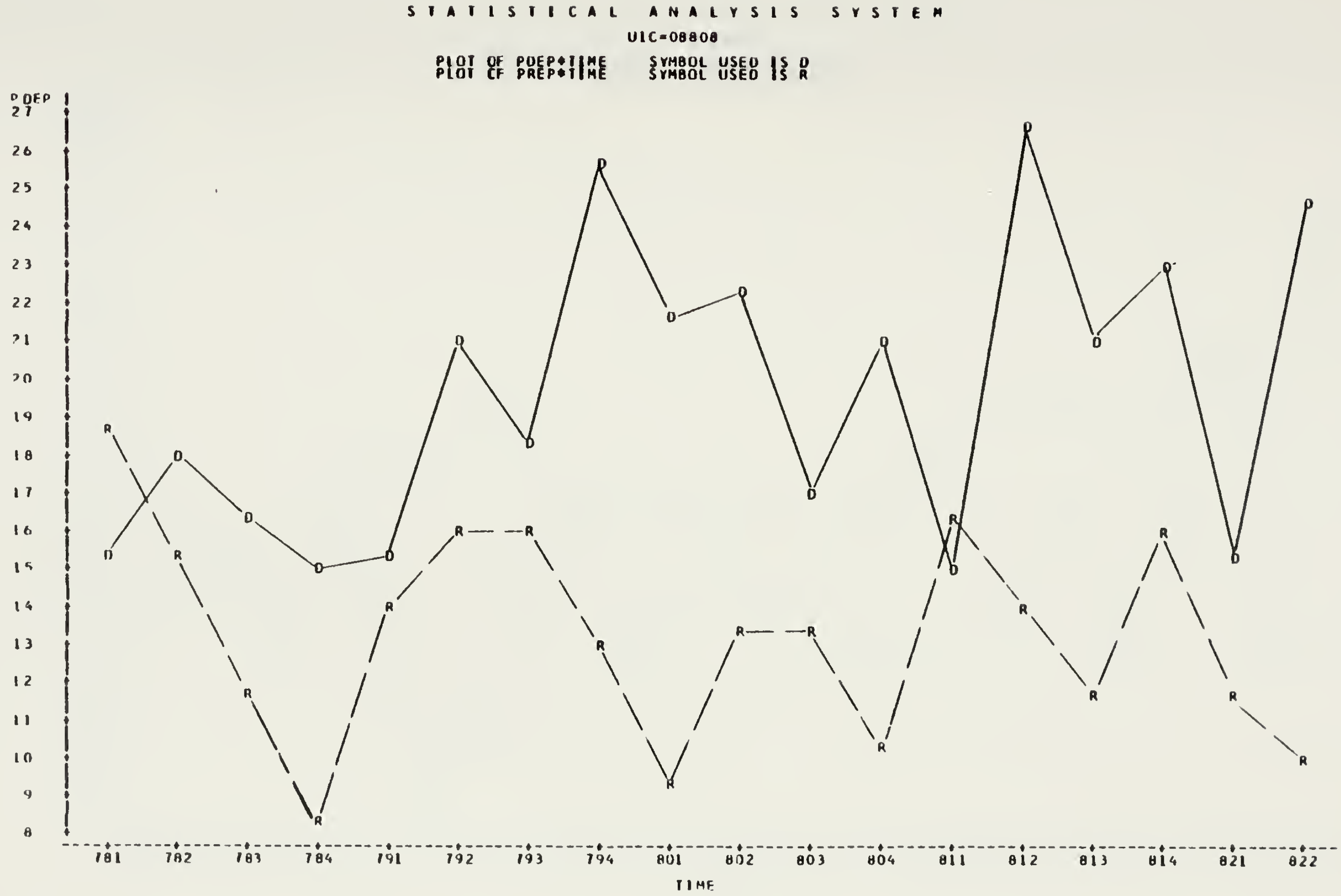
811
812
813
814
821
822
TIME
D
R

LPD 9 DENVER



LPH 3 OKINAWA

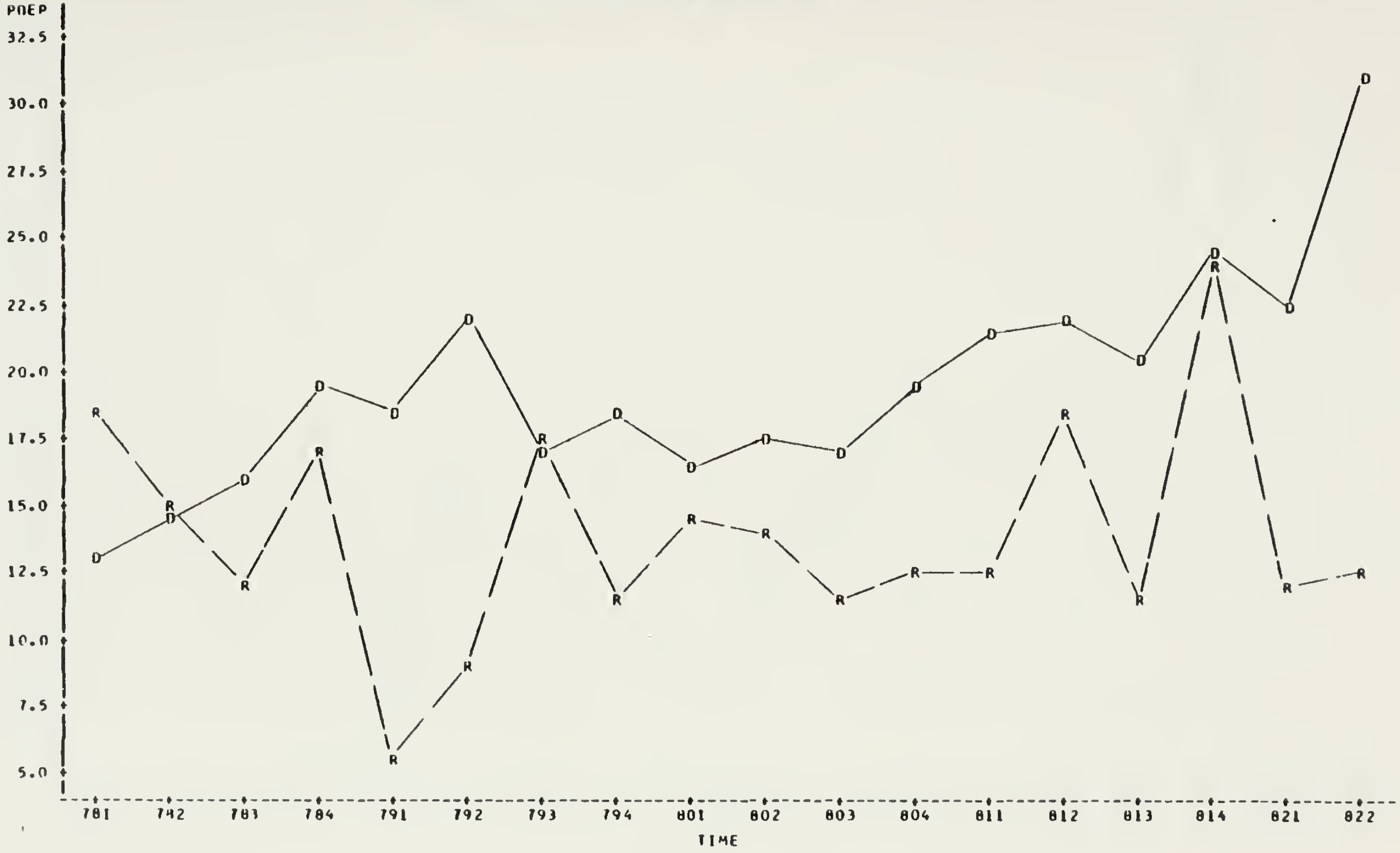

STATISTICAL ANALYSIS SYSTEM
UIC=08808
PLOT OF PDEP*TIME SYMBOL USED IS D
PLOT CF PREP*TIME SYMBOL USED IS R
PDEP
27
26
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
781
782
783
784
791
792
793
794
801
802
803
804
811
812
813
814
821
822
TIME

AR 5 VULCAN

STATISTICAL ANALYSIS SYSTEM

UIC=08809

PLOT OF PDEP*TIME SYMBOL USED IS D
PLOT OF PREP*TIME SYMBOL USED IS R

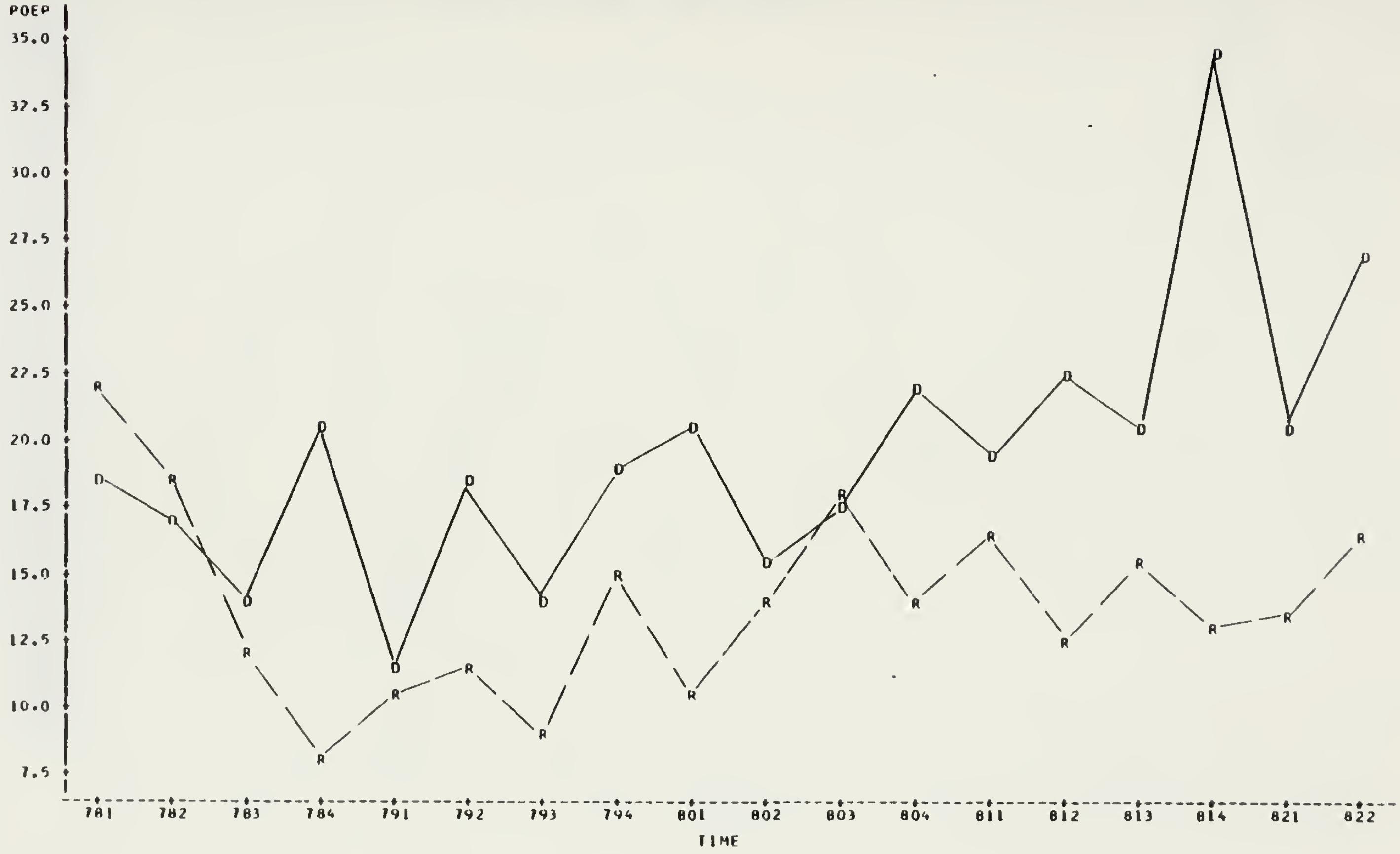


AR 7 HECTOR

STATISTICAL ANALYSIS SYSTEM

UIC=20012

PLOT OF PDEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R

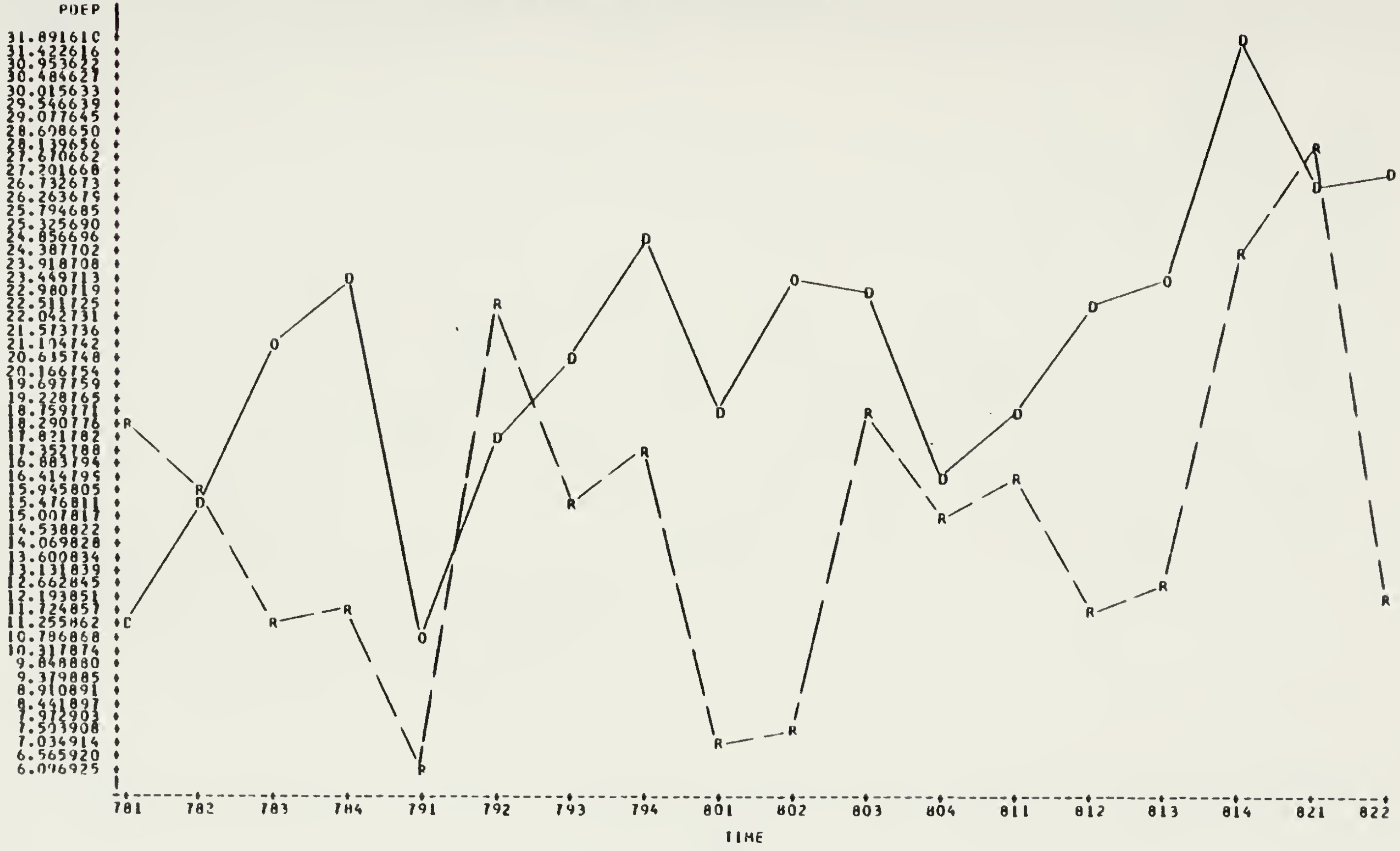


LSD 37 PORTLAND

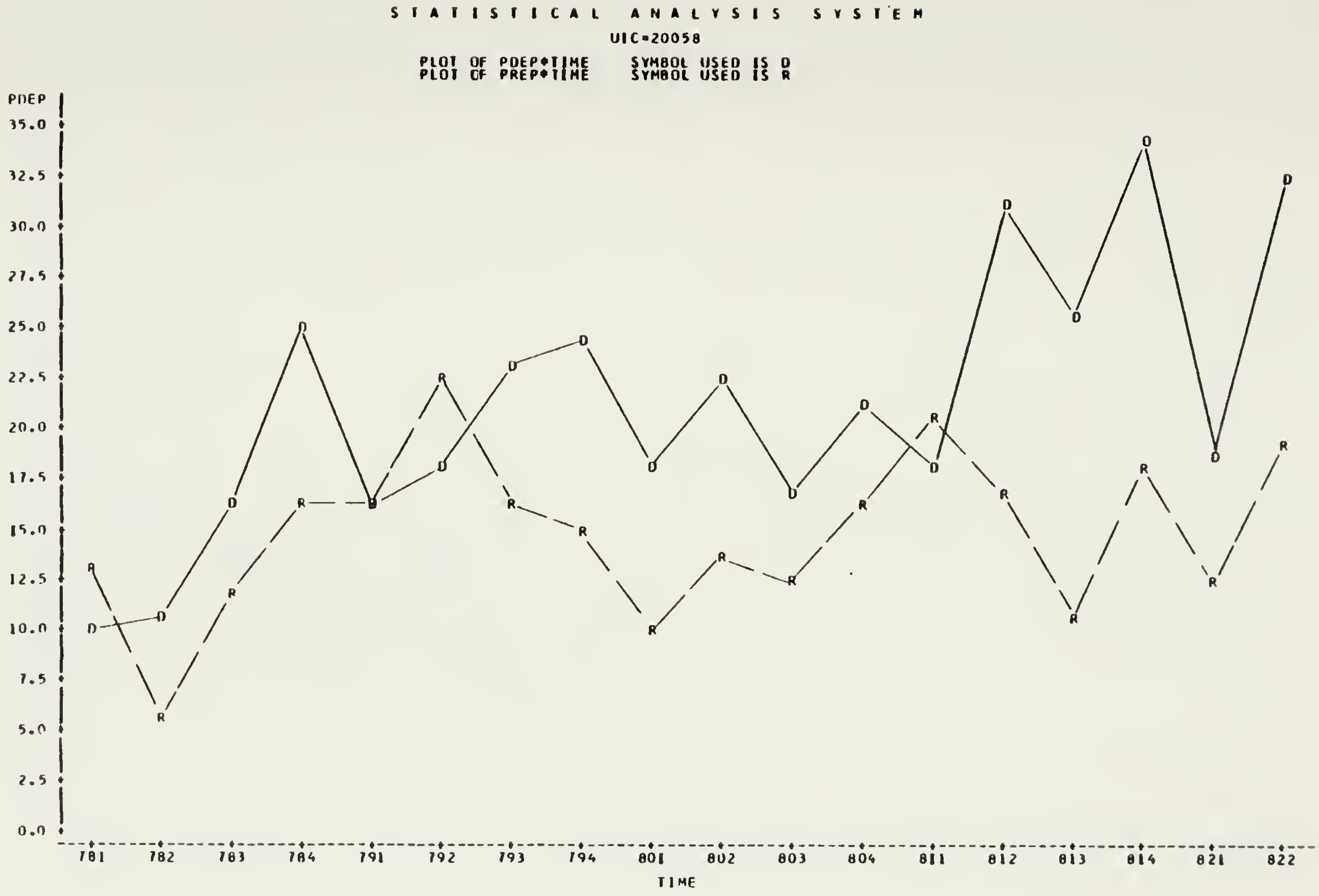
STATISTICAL ANALYSIS SYSTEM

UIC=20050

PLOT OF PDEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R



FF 1079 BOWEN


STATISTICAL ANALYSIS SYSTEM
UIC=20058
PLOT OF PDEP*TIME SYMBOL USED IS D
PLOT OF PREP*TIME SYMBOL USED IS R
PDEP
35.0
32.5
30.0
27.5
25.0
22.5
20.0
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
781
782
783
784
791
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801
802
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804
811
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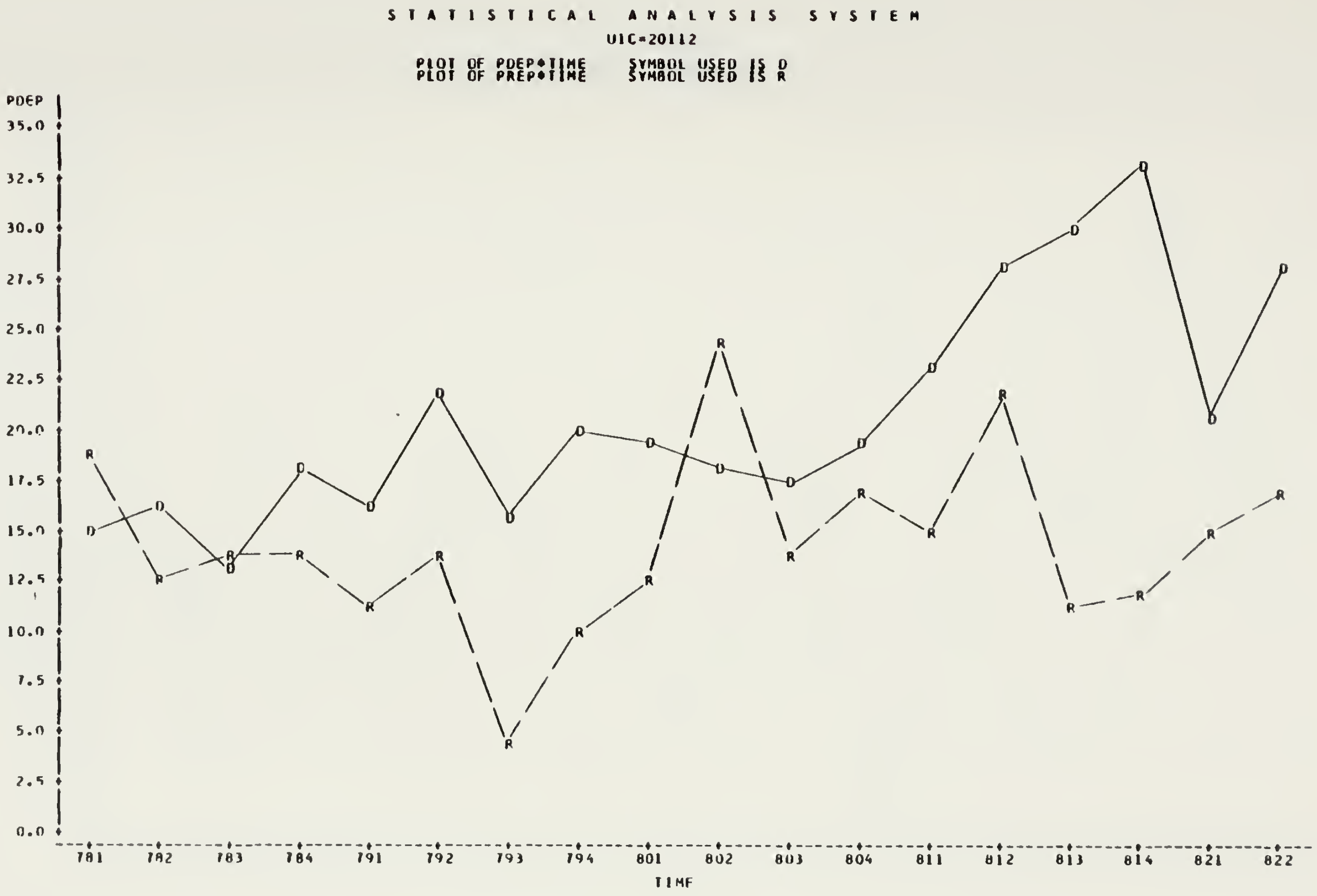
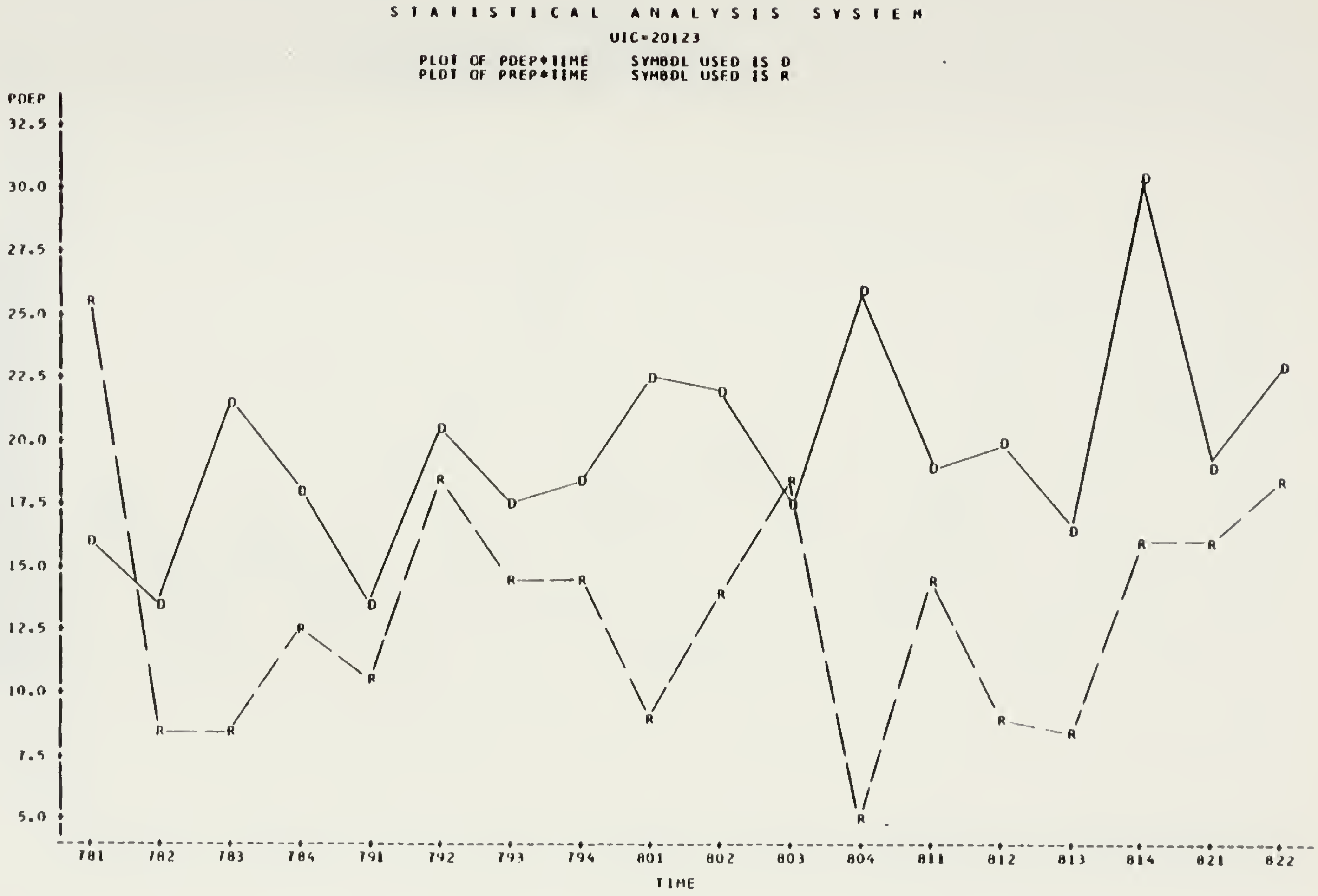
813
814
821
822
TIME

FF 1087 KIRK



AE 29 MOUNT HOOD

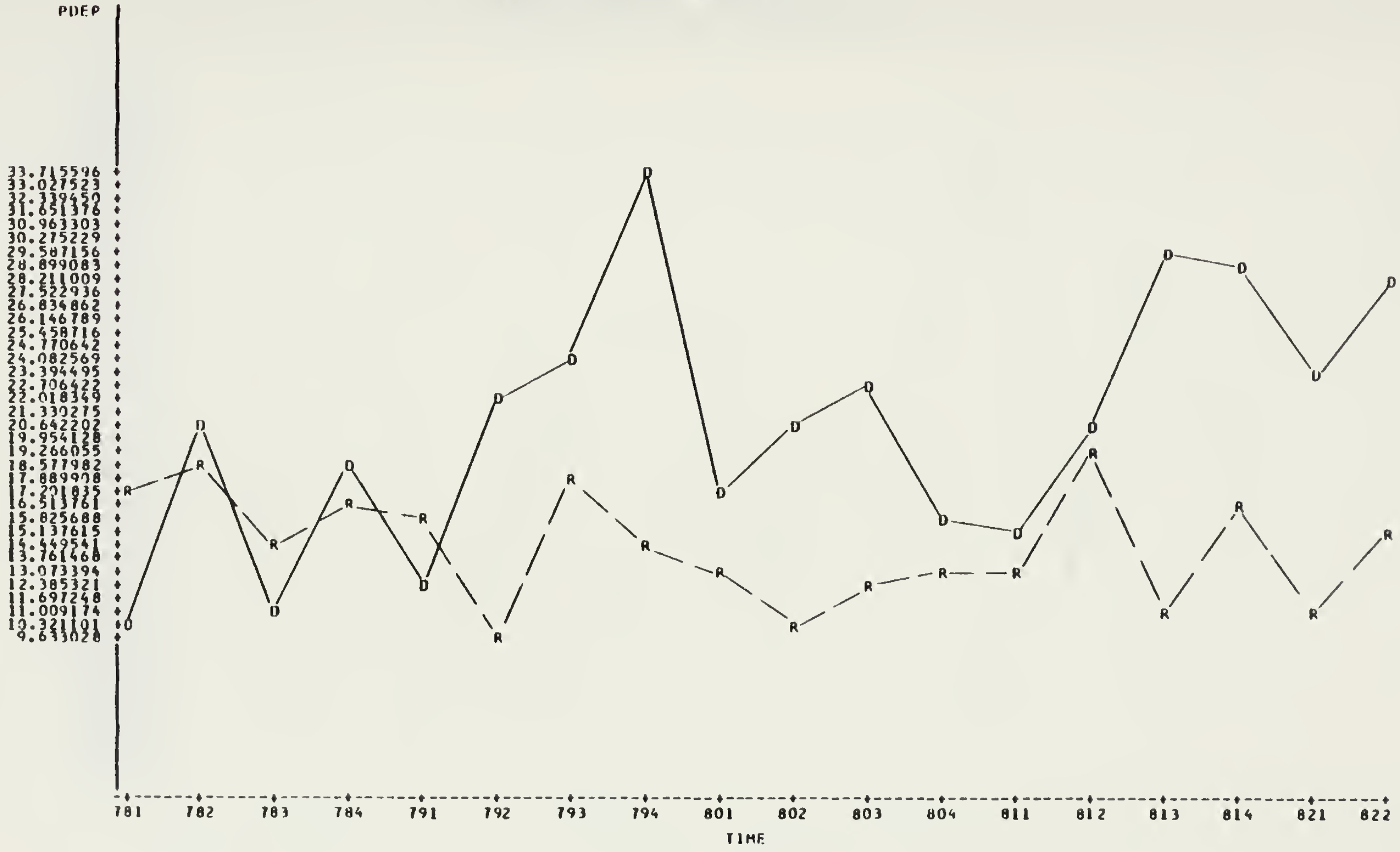


AOR 4 SAVANNAH

STATISTICAL ANALYSIS SYSTEM

UIC=20143

PLOT OF PDEP*TIME SYMBOL USED IS D
PLOT OF PREP*TIME SYMBOL USED IS R

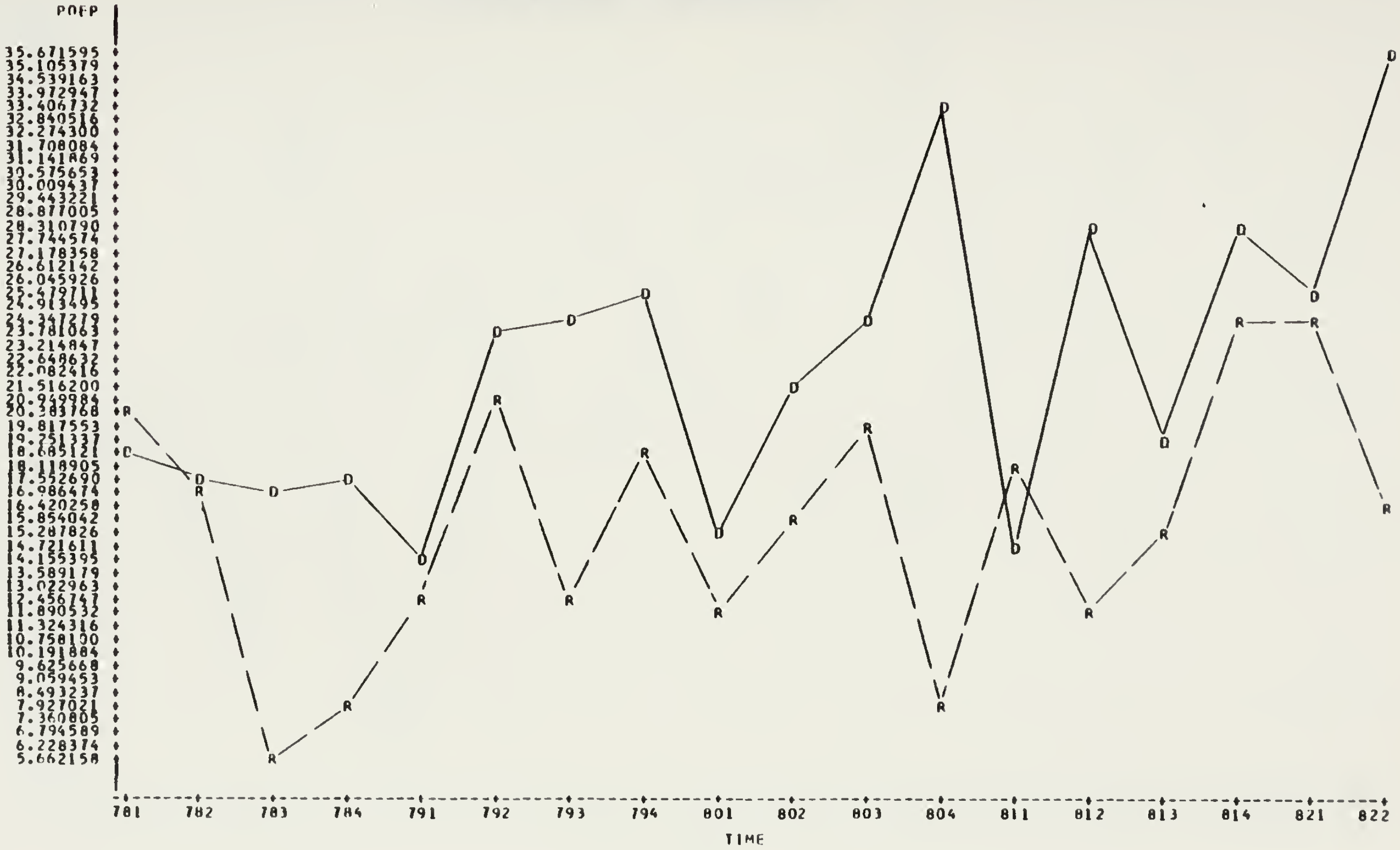


ASR 21 PIGEON

S T A T I S T I C A L   A N A L Y S I S   S Y S T E M.

UIC=20223

PLOT OF POEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R

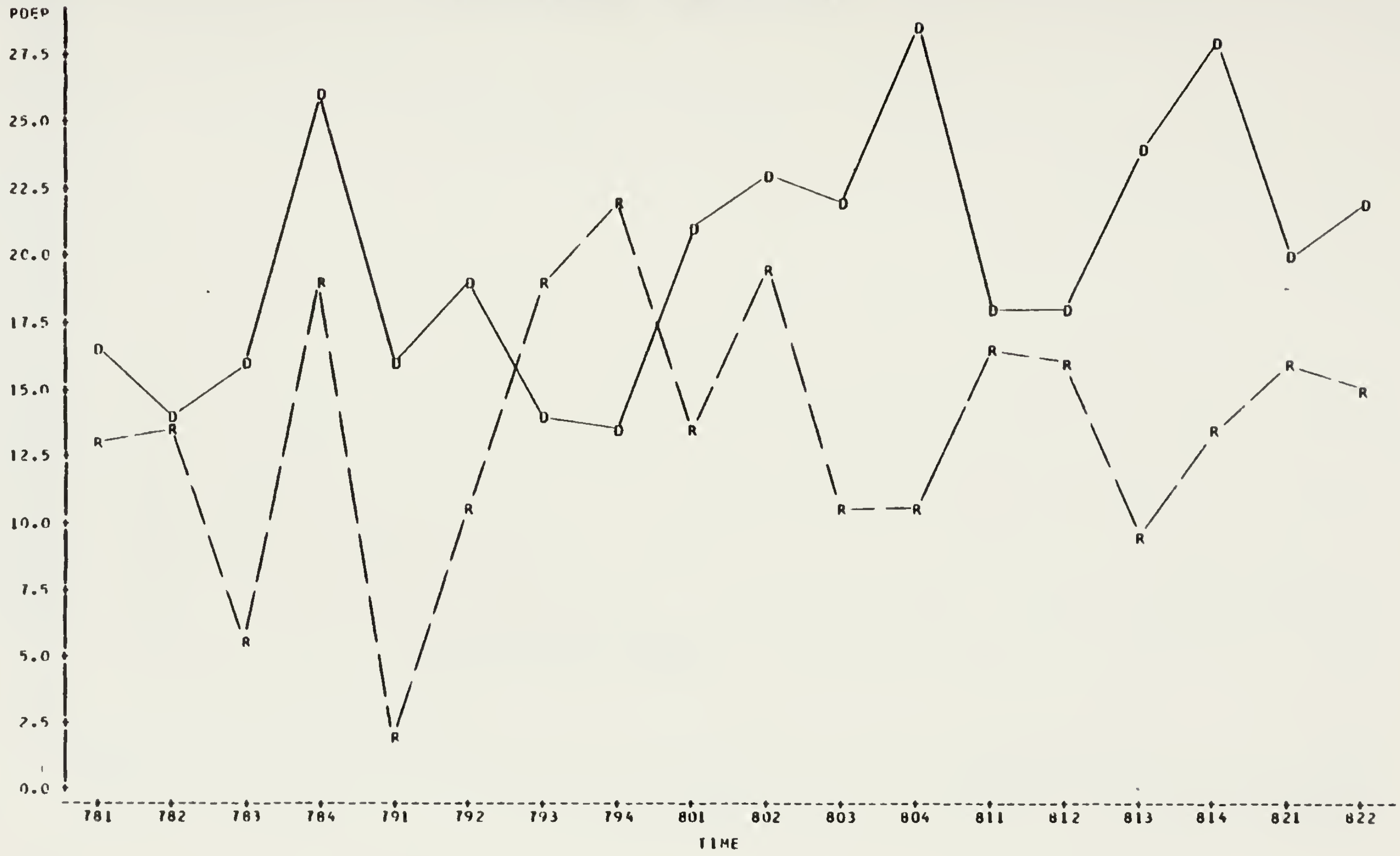


LST 1197 BARNSTABLE CTY

STATISTICAL ANALYSIS SYSTEM

UIC=20576

PLOT OF PDEP*TIME SYMBOL USED IS D
PLOT OF PREP*TIME SYMBOL USED IS R

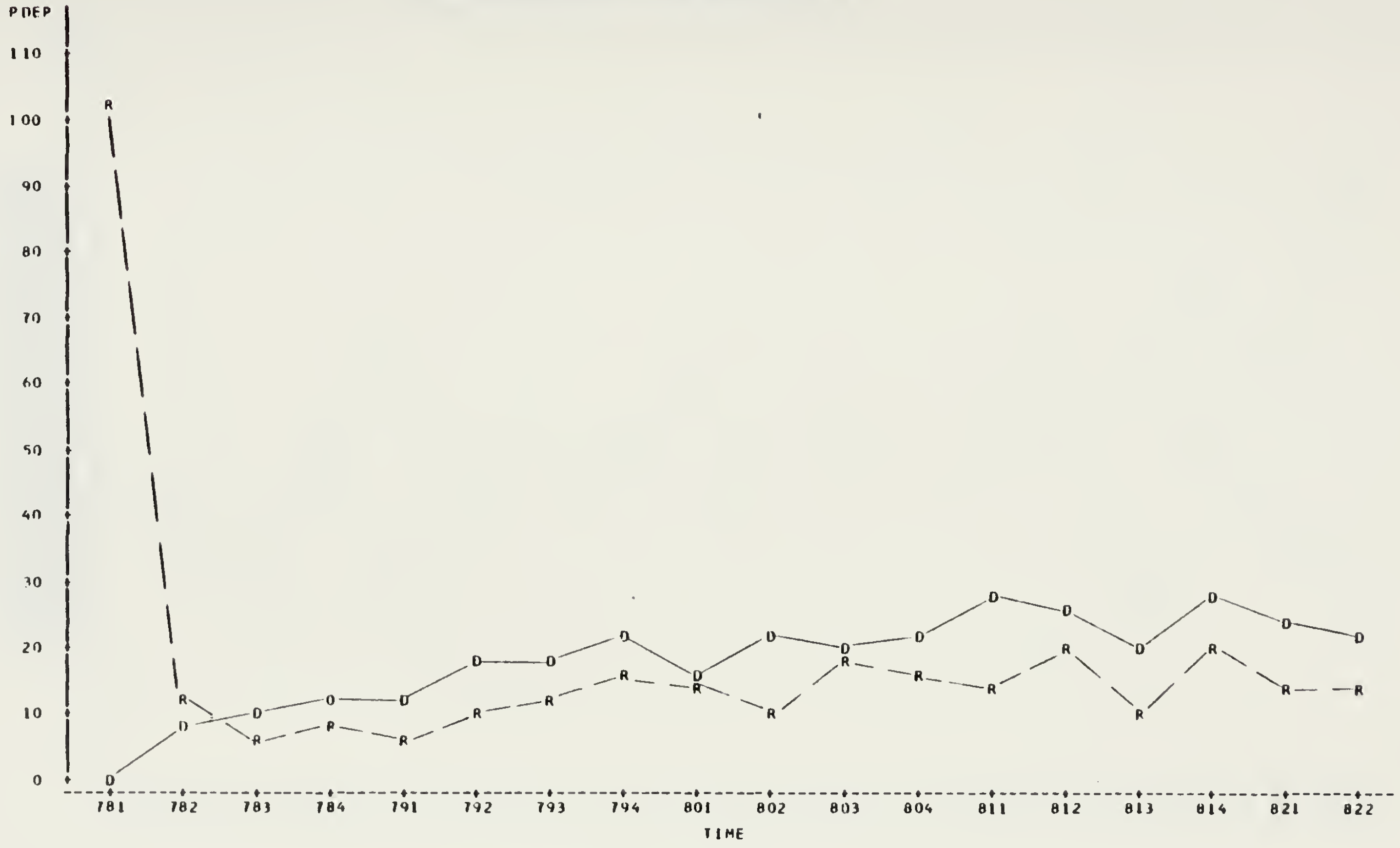


DD 965 KINKAID

STATISTICAL ANALYSIS SYSTEM

UIC=20632

PLOT OF PDEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R

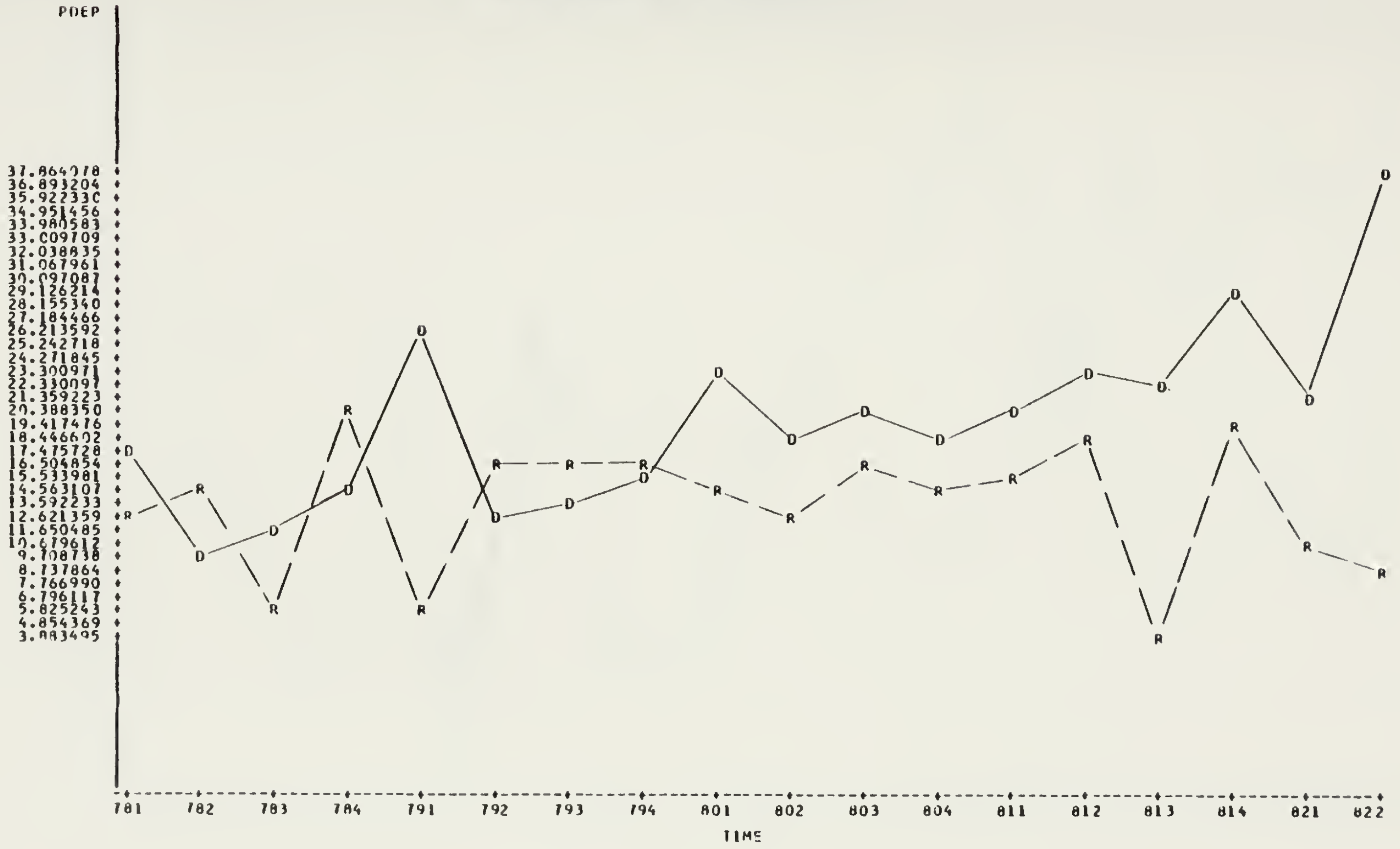


LHA 2 SAIPAN

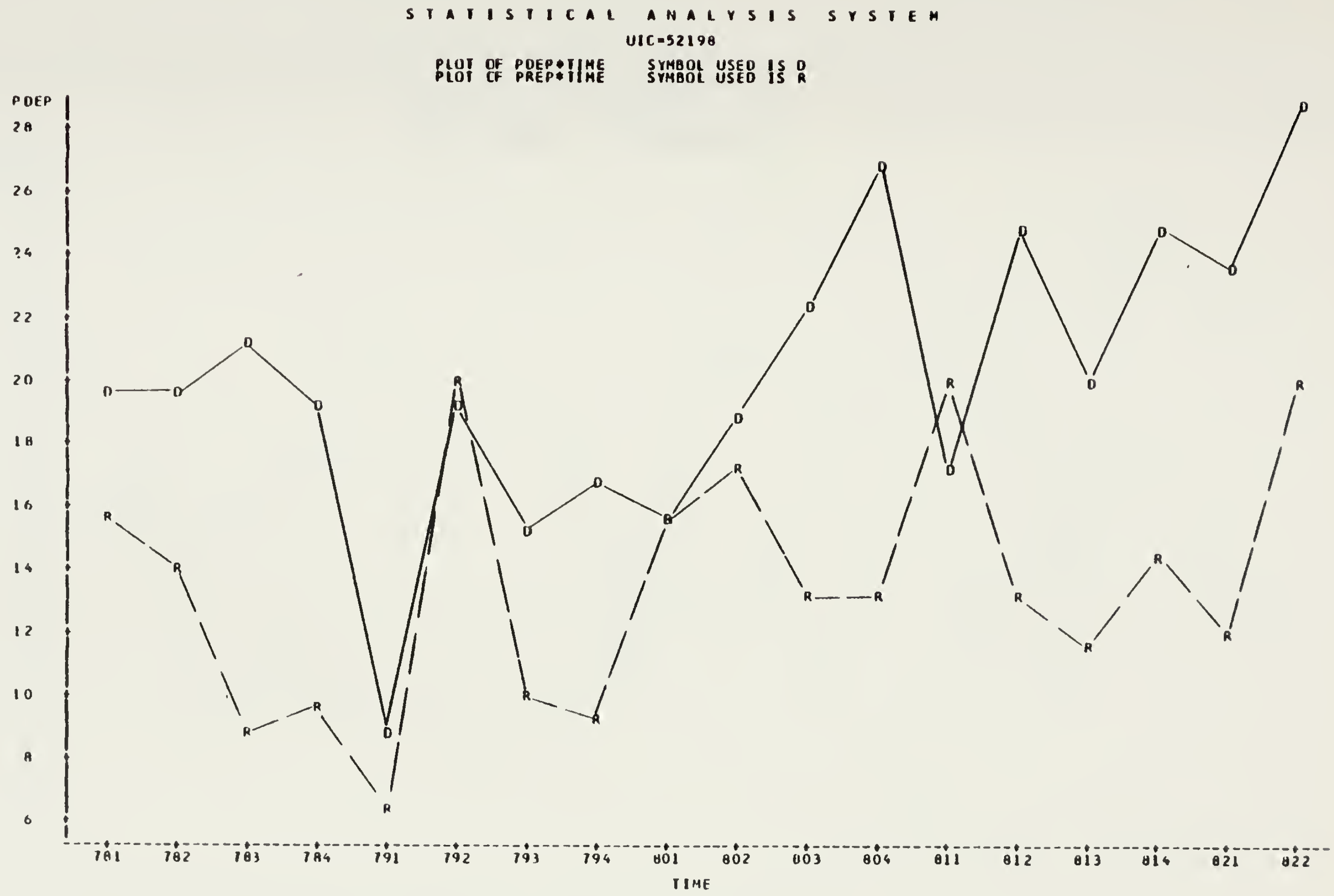
STATISTICAL ANALYSIS SYSTEM

UIC=20642

PLOT OF PDEP*TIME SYMBOL USED IS D
PLOT OF PREP*TIME SYMBOL USED IS R



SSN 687 RICHARD RUSSELL

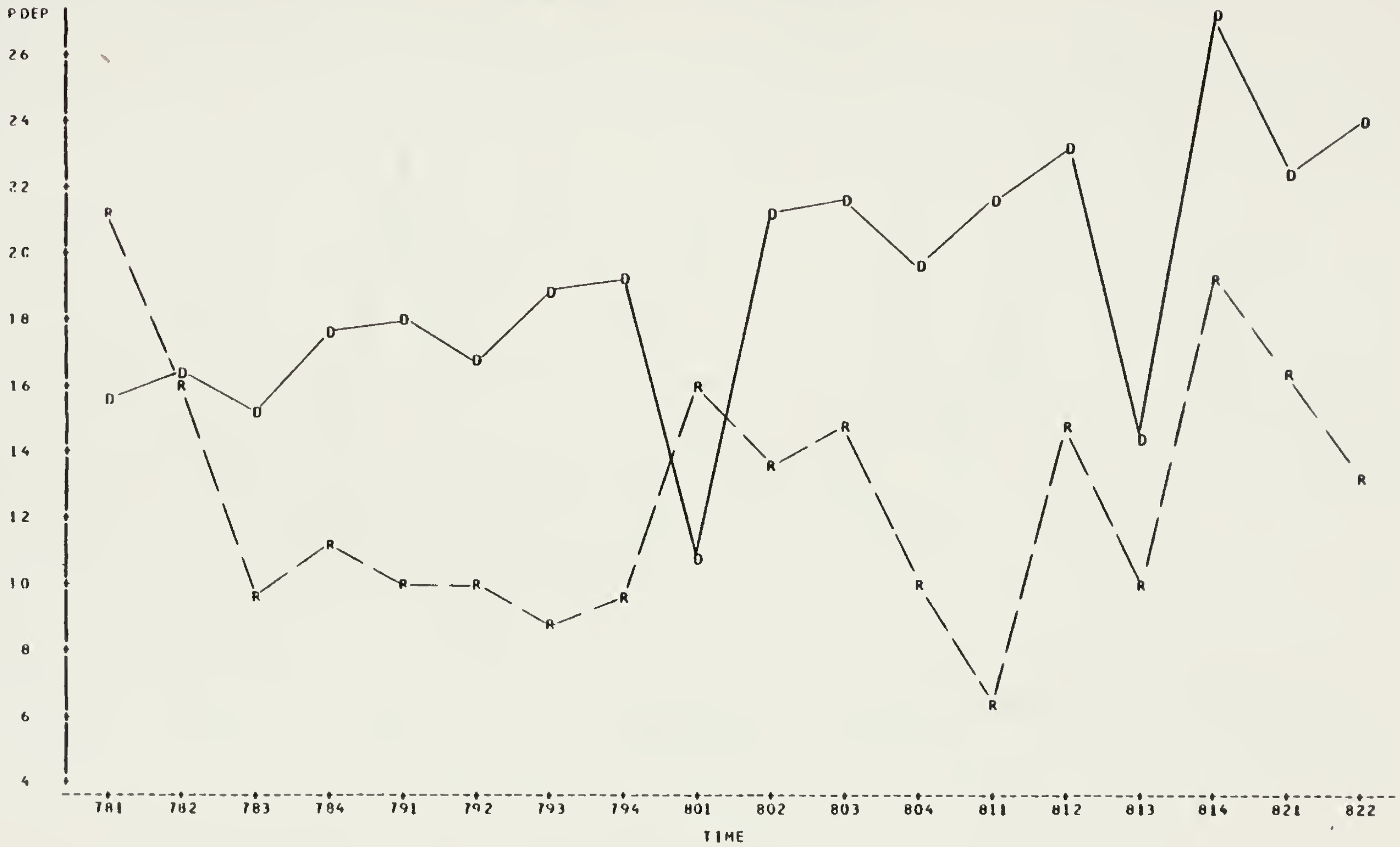

STATISTICAL ANALYSIS SYSTEM
UIC=52198
PLOT OF PDEP*TIME SYMBOL USED IS D
PLOT CF PREP*TIME SYMBOL USED IS R

DD 938 JONAS INGRAM

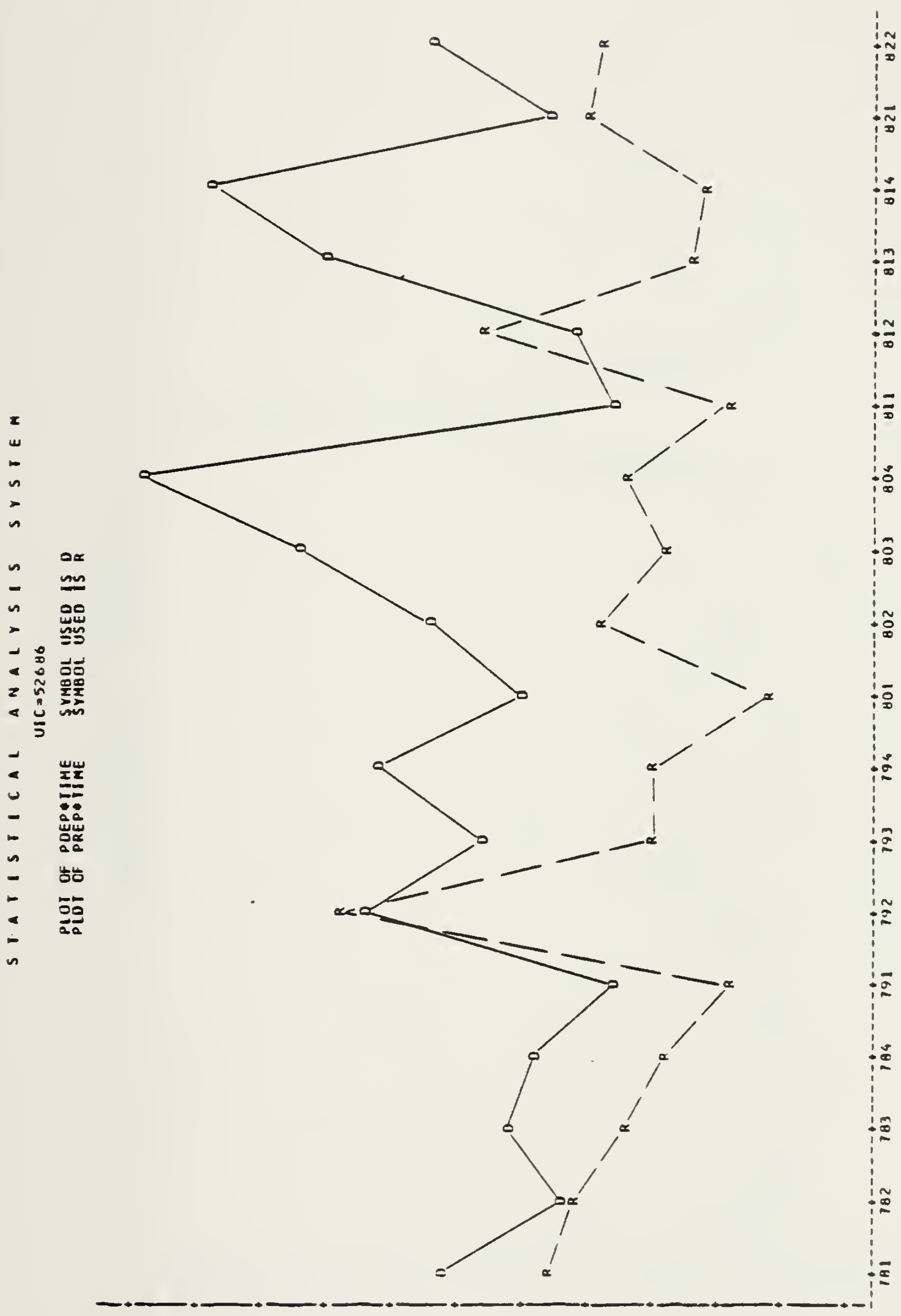
STATISTICAL ANALYSIS SYSTEM

UIC=52234

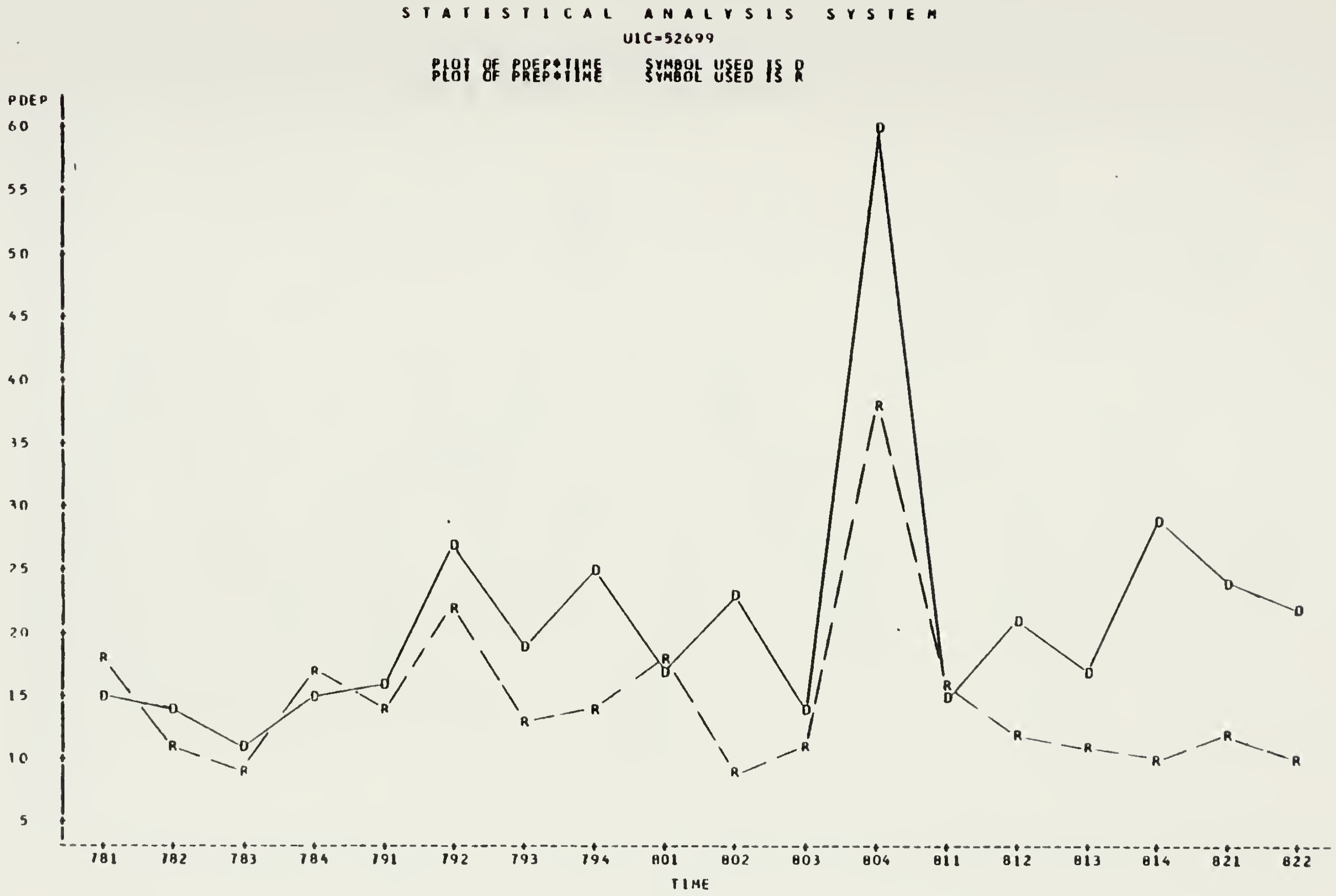
PLOT OF PDEP*TIME SYMBOL USED IS D
PLOT OF PREP*TIME SYMBOL USED IS R



DDG 40 COONTZ



DDG 46 PREBLE


STATISTICAL ANALYSIS SYSTEM
UIC=52699
PLOT OF PDEP*TIME SYMBOL USED IS D
PLOT OF PREP*TIME SYMBOL USED IS R
PDEP
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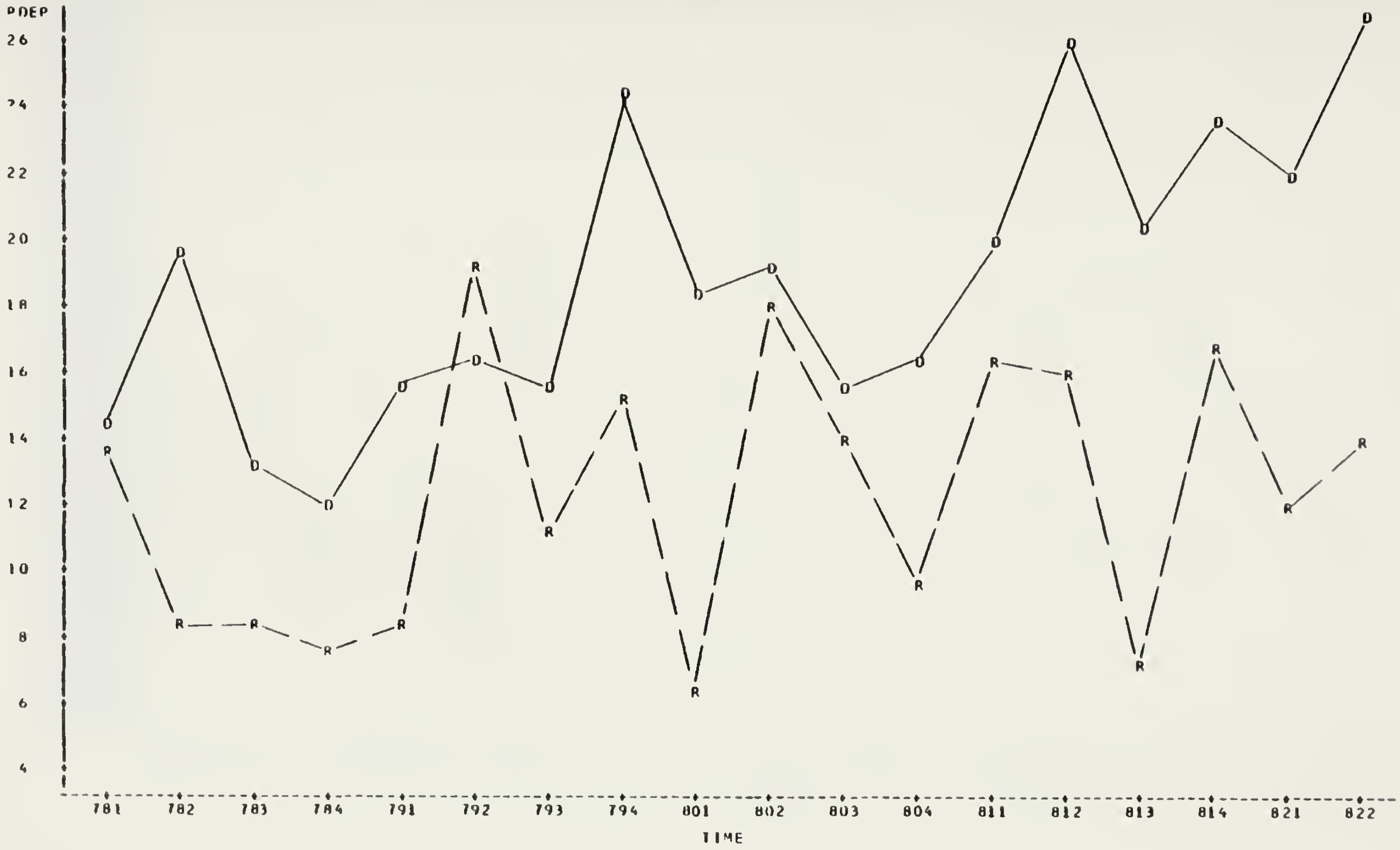
45
40
35
30
25
20
15
10
5
781
782
783
784
791
792
793
794
801
802
803
804
811
812
813
814
821
822
TIME

CG 24 REEVES

STATISTICAL ANALYSIS SYSTEM

UIC=52700

PLOT OF PDEP*TIME SYMBOL USED IS D
PLOT OF PREP*TIME SYMBOL USED IS R

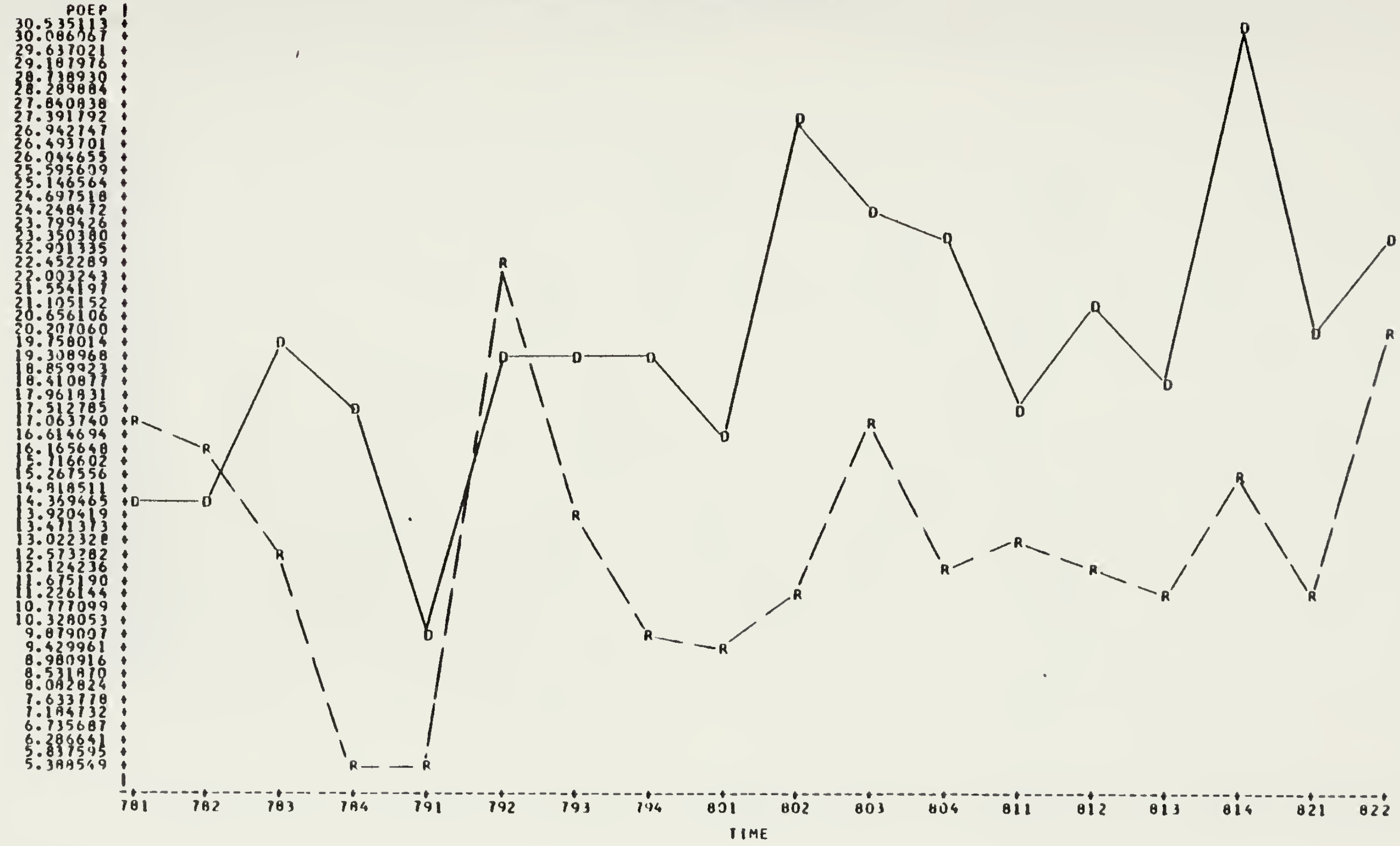


CGN 25 BAINBRIDGE

STATISTICAL ANALYSIS SYSTEM

UIC=54057

PLOT OF POEP*TIME   SYMBOL USED IS D
PLOT OF PREP*TIME   SYMBOL USED IS R

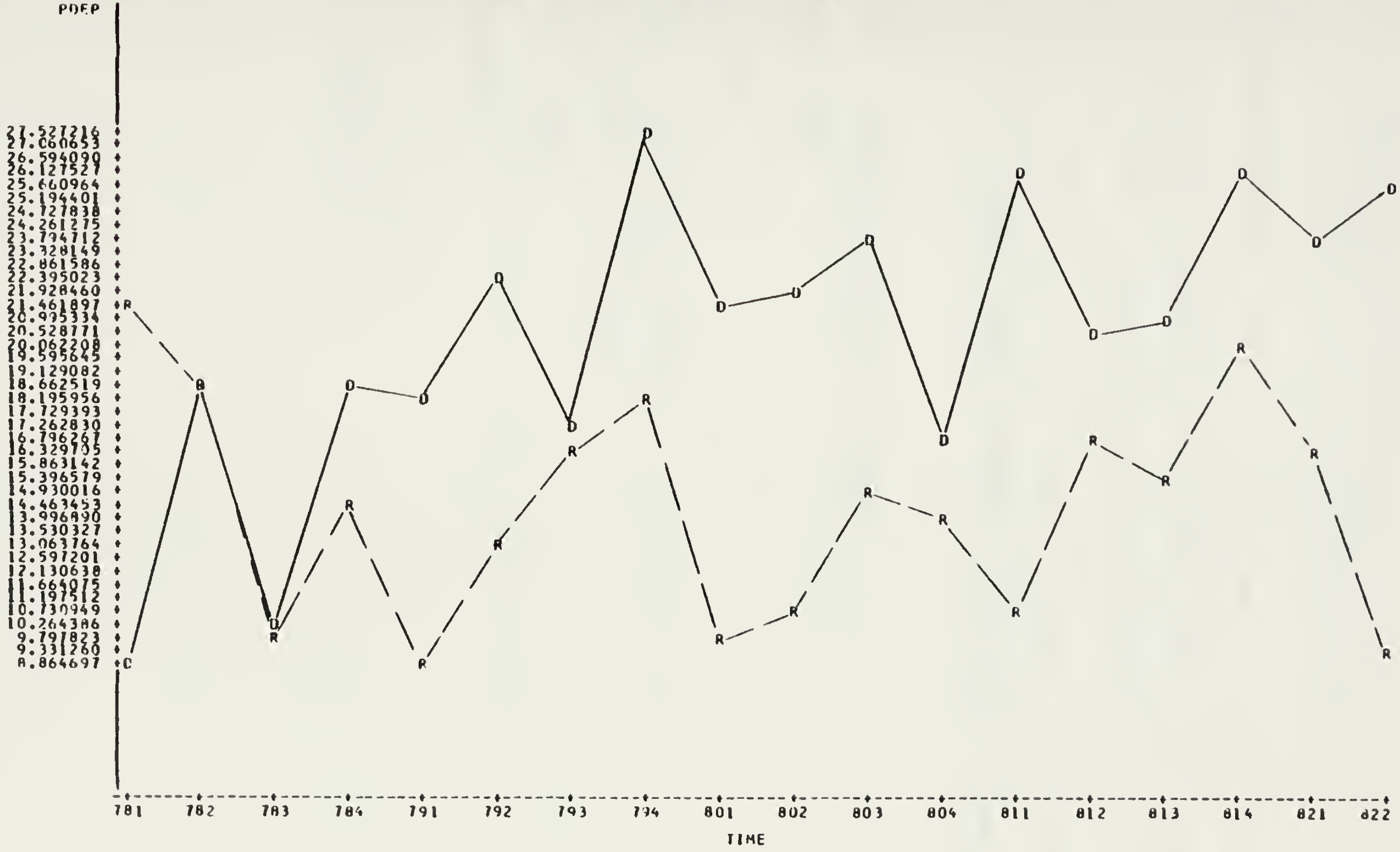


FF 1062 WHIPPLE

STATISTICAL ANALYSIS SYSTEM

UIC=54064

PLOT OF DPEP*TIME SYMBOL USED IS D
PLOT OF PREP*TIME SYMBOL USED IS R



FF 1069 BAGLEY

Appendix K

Comparative Characteristic Statistics of Reporters and Leavers by UIC

The data displayed below is arranged in order (rows) by time from the first quarter of FY 1978 until the second quarter of FY 1982. Statistics are provided for each ship by quarter with data for reporting and departing personnel arranged left to right respectively. The data elements are as follows:

Time: fiscal year and quarter
Median Age
Mean Age
Median Length of Service
Mean Length of Service
Median AFQT
Mean AFQT
Median Education
Mean Education

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              COMPARATIVE STATISTICS OF PERSONNEL INVOLVED IN TURNOVER

    UIC    02534                  SHIP NAME  ARS 39 CONSERVER

             MEDIAN AGE          MEDIAN LOS          MEDIAN AFQT         MEDIAN EDUCATION
   TIME    REPORT   DEPART     REPORT  DEPART      REPORT   DEPART      REPORT   DEPART
    801     24.67    22.50      4.79    3.00        47.00    48.50       12.00    12.00
    802     21.54    22.83      1.79    3.25        58.00    61.50       12.00    12.00
    803     19.88    21.33      0.92    2.25        63.00    62.00       12.00    12.00
    804     30.33    24.42      7.92    5.50        62.00    69.00       12.00    12.00
    811     19.42    24.67      0.67    3.25        33.00    69.00       12.00    12.00
    812     22.17    24.17      3.08    4.67        70.00    60.00       12.00    12.00
    813     22.21    23.04      2.17    4.13        48.00    56.50       12.00    12.00
    814     23.33    23.67      3.42    4.17        60.00    56.00       12.00    12.00
    821     22.50    23.50      4.13    4.83        66.50    70.00       12.00    12.00
    822     24.08    22.13      3.13    3.38        45.50    60.50       12.00    12.00


              MEAN AGE           MEAN LOS            MEAN AFQT           MEAN EDUCATION
   TIME    REPORT   DEPART     REPORT  DEPART      REPORT   DEPART      REPORT   DEPART
    801     26.41    25.35      6.63    5.58        46.28    54.93       11.78    11.57
    802     22.40    25.24      2.27    5.58        55.67    59.46       11.83    12.00
    803     19.92    22.02      1.15    3.02        67.00    66.09       12.00    11.36
    804     30.38    26.32      8.86    6.35        53.88    65.80       12.38    11.80
    811     20.07    25.76      1.23    5.21        35.14    63.92       12.00    12.00
    812     25.25    26.13      5.56    7.21        63.00    59.90       12.00    11.95
    813     23.18    24.28      3.39    4.60        48.59    63.44       12.00    12.17
    814     24.48    26.68      4.51    5.87        61.18    59.40       12.18    11.84
    821     22.99    25.18      4.54    5.84        67.67    64.89       11.83    11.84
    822     25.05    24.53      4.79    5.35        49.90    60.86       11.80    11.64
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            COMPARATIVE STATISTICS CF PERSONNEL INVOLVED IN TURNOVER

     UIC    02538              SHIP NAME  ARS 43 RECOVERY

               MEDIAN AGE         MEDIAN LOS           MEDIAN AFQT         MEDIAN EDUCATION
   TIME      REPORT  DEPART     REPORT DEPART        REPORT  DEPART        REPORT  DEPART
    801       22.08   23.29      2.67    4.46         60.00   62.00         12.00   12.00
    802       19.54   25.17      1.04    3.67         54.00   65.00         12.00   12.00
    803       23.33   21.75      3.25    2.92         67.00   58.00         12.00   12.00
    804       23.08   22.92      3.08    3.33         62.00   52.00         12.00   12.00
    811       34.38   22.38     13.46    3.42         29.00   64.00         12.50   12.00
    812       20.67   26.25      0.92    6.75         62.00   65.00         12.00   12.00
    813       21.92   21.46      2.08    2.29         44.00   59.00         12.00   12.00
    814       22.33   25.67      4.33    4.54         61.00   64.50         12.00   12.00
    821       20.25   20.54      0.67    1.17         36.00   82.50         12.00   12.00
    822       19.67   23.00      0.83    4.21         84.50   58.00         12.00   12.00


                MEAN AGE           MEAN LOS             MEAN AFQT          MEAN EDUCATION
   TIME      REPORT  DEPART     REPORT DEPART        REPORT  DEPART        REPORT  DEPART
    801       24.64   25.33      5.93    5.93         68.00   60.67         11.73   11.92
    802       21.26   25.88      1.82    5.47         63.38   59.85         12.00   12.00
    803       23.57   23.70      4.66    4.41         70.00   60.57         11.82   11.81
    804       25.11   23.00      5.39    4.24         63.10   54.73         11.80   11.67
    811       34.38   23.06     13.46    3.42         29.00   59.44         12.50   11.81
    812       22.03   28.78      2.54    9.01         60.60   62.00         12.00   12.07
    813       24.25   23.30      4.44    4.20         48.00   60.50         11.76   11.85
    814       24.17   27.09      5.30    7.14         59.18   63.93         11.27   11.57
    821       21.74   21.49      2.52    2.17         42.14   77.33         12.00   12.33
    822       20.58   25.27      1.31    5.67         80.42   56.77         12.42   11.86
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         COMPARATIVE STATISTICS CF PERSONNEL INVOLVED IN TURNOVER

    UIC     03128              SFIP NAME   LSD 28 THOMASTON

              MEDIAN AGE          MEDIAN LOS          MEDIAN AFQT          MEDIAN EDUCATION
   TIME     REPORT   DEPART     REPORT DEPART       REPORT   DEPART      REPORT    DEPART
    801      20.50    23.04       1.75    4.25       51.00    57.00       12.00     12.00
    802      20.25    23.21       1.75    4.33       60.00    60.00       12.00     12.00
    803      20.50    22.42       1.08    3.17       52.00    62.00       12.00     12.00
    804      21.00    22.08       0.83    3.17       55.00    58.00       12.00     12.00
    811      20.50    22.96       0.92    4.00       56.00    52.00       12.00     12.00
    812      20.50    24.33       0.83    3.25       53.00    59.00       12.00     12.00
    813      20.25    22.38       1.17    3.13       47.00    56.00       12.00     12.00
    814      21.17    22.67       0.83    4.04       50.00    65.00       12.00     12.00
    821      21.96    22.17       1.92    2.79       53.00    60.00       12.00     12.00
    822      21.13    22.42       0.83    3.33       59.00    59.00       12.00     12.00


               MEAN AGE            MEAN LOS             MEAN AFQT           MEAN EDUCATION
   TIME     REPORT   DEPART     REPORT DEPART       REPORT   DEPART      REPORT    DEPART
    801      23.76    24.66       4.62    4.74       52.62    55.06       11.71     11.83
    802      23.66    24.26       4.05    4.53       59.90    57.24       11.90     12.00
    803      22.98    24.31       3.56    4.73       51.78    60.07       11.50     11.91
    804      21.01    23.46       1.29    4.03       55.47    60.67       11.37     11.85
    811      22.38    24.11       2.33    4.19       56.10    52.87       11.85     12.00
    812      22.09    26.15       2.85    5.91       54.49    58.78       11.87     12.05
    813      23.97    23.18       4.44    3.48       48.10    57.65       11.86     11.94
    814      22.45    24.12       2.62    4.71       47.32    64.31       11.44     11.79
    821      23.34    23.62       3.64    3.84       53.31    59.69       12.09     11.69
    822      23.01    24.61       3.11    4.72       57.71    58.33       12.06     11.51
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          COMPARATIVE STATISTICS OF PERSONNEL INVOLVED IN TURNOVER
     UIC    03129               SHIP NAME   LSD 29 PLYMOUTH ROCK

              MEDIAN AGE        MEDIAN LOS        MEDIAN AFQT       MEDIAN EDUCATION
   TIME     REPORT  DEPART    REPORT DEPART     REPORT  DEPART     REPORT  DEPART
    801     20.58   23.13      0.83   3.04      50.00   54.50      12.00   12.00
    802     20.21   21.83      1.00   2.25      59.50   62.00      12.00   12.00
    803     21.25   21.83      1.08   2.92      54.00   56.00      12.00   12.00
    804     20.50   22.33      0.92   3.08      54.00   55.00      12.00   12.00
    811     20.58   22.92      0.92   3.50      56.00   55.00      12.00   12.00
    812     20.58   22.67      0.92   3.25      52.00   60.00      12.00   12.00
    813     27.88   22.25      9.13   3.25      44.50   64.00      12.00   12.00
    814     26.50   22.25      2.58   3.25      54.00   62.00      12.00   12.00
    821     27.25   22.38      4.42   3.63      57.00   67.00      12.00   12.00
    822     20.75   23.33      1.42   3.75      50.00   62.00      12.00   12.00


               MEAN AGE         MEAN LOS          MEAN AFQT         MEAN EDUCATION
   TIME     REPORT  DEPART    REPORT DEPART     REPORT  DEPART     REPORT  DEPART
    801     21.83   24.74      2.10   4.59      49.95   56.89      11.76   11.64
    802     21.70   23.99      2.89   4.07      61.09   61.41      11.59   11.71
    803     22.87   22.96      2.93   3.43      53.95   58.76      11.65   11.58
    804     21.22   24.91      1.85   4.49      53.06   59.02      11.61   11.69
    811     22.52   23.98      1.87   4.60      55.27   56.30      12.12   12.06
    812     21.74   24.63      2.23   5.13      53.13   61.06      11.57   11.73
    813     26.60   23.84      7.54   4.18      44.83   58.31      12.00   11.69
    814     26.53   23.24      6.36   4.27      56.33   60.19      12.00   11.86
    821     28.02   24.62      7.04   5.08      50.36   62.79      11.68   12.05
    822     24.07   24.85      4.49   4.66      50.85   62.46      11.85   11.77
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              COMPARATIVE  STATISTICS  CF  PERSONNEL  INVOLVED  IN  TURNOVER

      UIC    03341                      SHIP  NAME   CV 41 MIDWAY

               MEDIAN AGE            MEDIAN LOS            MEDIAN AFQT           MEDIAN  EDUCATION
  TIME        REPORT  DEPART       REPORT  DEPART        REPORT   DEPART        REPORT   DEPART
   801         21.17   21.92        1.58    2.92          55.00    54.50         12.00    12.00
   8C2         20.33   21.75        1.00    2.92          50.00    55.00         12.00    12.00
   803         20.92   21.67        1.08    3.00          55.00    56.50         12.00    12.00
   8C4         21.00   22.25        1.00    3.08          55.00    58.00         12.00    12.00
   811         20.08   22.13        0.83    2.83          50.00    56.00         12.00    12.00
   812         20.42   21.92        1.00    3.00          50.00    54.00         12.00    12.00
   813         21.00   22.C8        1.17    3.00          56.00    56.00         12.00    12.00
   814         21.17   22.25        1.08    3.08          55.50    56.00         12.00    12.00
   821         21.00   22.58        1.00    3.13          52.00    56.00         12.00    12.00
   822         20.42   22.17        0.92    3.00          49.00    55.00         12.00    12.00


                 MEAN  AGE             MEAN LOS              MEAN AFQT            MEAN  EDUCATION
  TIME        REPORT  DEPART       REPORT  DEPART        REPORT   DEPART        REPORT   DEPART
   801         23.14   23.81        3.77    4.41          54.73    55.09         11.75    11.70
   802         22.10   23.24        2.58    3.83          53.23    56.41         11.80    11.72
   803         22.75   23.11        3.06    3.99          55.50    56.70         11.74    11.65
   8C4         23.24   24.24        3.42    4.74          56.44    58.73         11.63    11.80
   811         21.89   23.84        2.18    4.30          52.88    58.14         11.78    11.76
   812         22.44   23.49        2.82    4.14          52.53    56.40         11.91    11.72
   813         22.94   23.83        3.11    4.26          55.09    59.40         11.83    11.80
   814         22.97   23.86        3.25    4.35          54.88    58.68         11.85    11.74
   821         22.66   24.38        2.74    4.91          53.94    57.29         11.86    11.87
   822         22.15   23.63        2.47    4.09          50.62    57.63         11.94    11.89
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        COMPARATIVE  STATISTICS  OF  PERSONNEL  INVOLVED  IN  TURNOVER

   UIC    03343                 SHIP  NAME   CV 43 CORAL SEA

           MEDIAN AGE          MEDIAN LOS           MEDIAN AFQT        MEDIAN  EDUCATION
TIME     REPORT   DEPART     REPORT DEPART        REPORT   DEPART     REPORT    DEPART
 801      21.42    22.67       1.58    3.58        53.00    58.00      12.00     12.00
 802      21.00    22.83       1.50    3.67        54.00    56.00      12.00     12.00
 803      21.04    22.25       1.08    3.08        54.00    56.00      12.00     12.00
 804      20.88    22.25       1.21    2.75        58.00    60.00      12.00     12.00
 811      20.67    22.92       0.83    3.50        56.00    58.00      12.00     12.00
 812      20.42    22.67       0.83    3.25        54.00    56.00      12.00     12.00
 813      20.92    22.83       1.08    3.25        56.00    60.00      12.00     12.00
 814      22.08    22.92       2.38    3.50        54.50    58.00      12.00     12.00
 821      21.17    22.83       1.00    3.50        52.00    58.00      12.00     12.00
 822      21.04    22.63       0.83    3.25        47.00    58.00      12.00     12.00


            MEAN  AGE           MEAN LOS             MEAN AFQT          MEAN  EDUCATION
TIME     REPORT   DEPART     REPORT DEPART        REPORT   DEPART     REPORT    DEPART
 801      23.02    24.46       3.47    4.77        54.44    57.52      11.79     11.91
 802      22.83    24.19       3.44    4.53        56.12    57.24      11.70     11.78
 803      22.91    23.91       3.24    4.26        54.58    57.63      11.64     11.78
 804      23.00    23.76       3.12    4.00        57.78    59.53      11.82     11.92
 811      22.73    24.92       2.83    5.12        57.32    60.41      12.00     11.81
 812      22.04    24.40       2.19    4.57        53.64    57.63      11.87     11.77
 813      23.10    24.22       3.23    4.27        54.07    59.55      11.74     11.94
 814      24.07    24.91       4.00    5.00        55.69    58.06      11.77     11.84
 821      23.40    24.32       3.30    4.43        53.06    58.96      11.87     11.76
 822      23.16    24.37       2.94    4.55        49.98    58.11      11.87     11.76
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         COMPARATIVE STATISTICS CF PERSONNEL INVOLVED IN TURNOVER

     UIC    03359              SHIP NAME   CV 59 FORRESTAL

             MEDIAN AGE         MEDIAN LCS          MEDIAN AFQT        MEDIAN EDUCATION
 TIME      REPORT   DEPART    REPORT DEPART       REPORT   DEPART      REPORT   DEPART
  801       21.42    22.17     1.58    2.67        55.00    61.00       12.00    12.00
  802       20.75    22.67     1.50    3.25        55.00    58.00       12.00    12.00
  803       21.46    22.04     1.25    2.67        55.00    60.00       12.00    12.00
  804       21.04    22.33     1.21    3.08        55.00    59.00       12.00    12.00
  811       21.33    22.83     1.58    3.67        58.00    56.00       12.00    12.00
  812       20.83    22.92     1.17    3.42        55.00    60.00       12.00    12.00
  813       21.25    22.71     1.42    3.92        55.00    56.00       12.00    12.00
  814       22.00    22.83     2.33    4.08        56.00    60.00       12.00    12.00
  821       20.42    22.96     0.83    3.63        52.00    59.00       12.00    12.00
  822       20.67    22.75     0.92    3.00        50.00    62.00       12.00    12.00


              MEAN AGE           MEAN LOS            MEAN AFQT         MEAN EDUCATION
 TIME      REPORT   DEPART    REPORT DEPART       REPORT   DEPART      REPORT   DEPART
  801       22.97    23.69     3.40    4.21        56.81    60.83       11.80    11.84
  802       22.65    24.24     3.20    4.43        56.58    58.53       11.61    11.84
  803       23.23    23.58     3.47    3.92        56.02    60.62       11.53    11.79
  804       22.83    23.97     3.01    4.36        57.56    59.58       11.56    11.81
  811       23.25    24.86     3.37    5.32        58.35    59.10       11.69    11.73
  812       22.67    24.51     2.96    4.69        54.70    60.02       11.81    11.84
  813       22.93    24.11     3.29    4.65        54.29    58.72       11.83    11.76
  814       24.39    24.28     4.25    4.83        56.31    59.62       11.87    11.69
  821       22.35    24.55     2.51    4.89        53.36    58.88       11.74    11.84
  822       22.53    24.21     2.82    4.36        51.52    60.66       11.85    11.81
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              COMPARATIVE STATISTICS CF PERSONNEL INVOLVED IN TURNOVER

   UIC    03368                  SHIP NAME  CVN 68 NIMITZ

          MEDIAN AGE         MEDIAN LOS         MEDIAN AFQT        MEDIAN EDUCATION
 TIME    REPORT  DEPART    REPORT DEPART      REPORT  DEPART      REPORT  DEPART
  801     21.00   22.58     1.50    3.42       63.00   60.00       12.00   12.00
  802     21.67   22.75     2.25    3.33       58.00   63.00       12.00   12.00
  803     21.17   22.67     1.08    2.96       60.00   61.50       12.00   12.00
  804     20.67   22.50     1.08    3.25       56.00   62.00       12.00   12.00
  811     21.08   22.50     1.17    3.00       58.00   60.00       12.00   12.00
  812     20.75   22.58     1.00    3.17       58.00   61.00       12.00   12.00
  813     20.92   22.75     1.00    3.54       52.00   60.00       12.00   12.00
  814     22.00   22.83     2.25    4.08       58.00   60.00       12.00   12.00
  821     21.42   22.92     1.75    3.63       56.00   60.00       12.00   12.00
  822     20.92   23.17     0.92    3.33       53.00   60.00       12.00   12.00


           MEAN AGE           MEAN LOS           MEAN AFQT          MEAN EDUCATION
 TIME    REPORT  DEPART    REPORT DEPART      REPORT  DEPART      REPORT  DEPART
  801     22.73   23.91     3.10    4.42       62.79   59.54       11.96   11.81
  802     23.49   23.64     3.87    4.04       61.44   62.18       11.80   11.86
  803     22.59   23.91     2.95    4.20       59.83   62.32       11.54   11.88
  804     22.34   23.99     2.92    4.45       58.50   62.15       11.54   11.86
  811     22.43   23.69     2.78    4.02       59.76   62.26       11.75   11.80
  812     22.75   23.84     2.80    4.16       59.01   61.86       11.81   11.81
  813     22.08   23.89     2.23    4.25       53.71   60.44       11.73   11.79
  814     23.90   24.42     3.96    4.87       56.98   61.18       11.84   11.77
  821     23.12   23.98     3.37    4.23       56.05   60.07       11.89   11.76
  822     22.64   24.35     2.93    4.35       53.66   60.14       11.86   11.90
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          COMPARATIVE STATISTICS OF PERSONNEL INVOLVED IN TURNOVER

     UIC    04621                    SHIP NAME  AS 12 SPERRY

               MEDIAN AGE          MEDIAN LOS          MEDIAN AFQT         MEDIAN EDUCATION
     TIME    REPORT   DEPART     REPORT DEPART       REPORT   DEPART      REPORT    DEPART
      801     20.42    23.58     0.75     4.25        58.00    64.00       12.00     12.00
      802     20.71    21.21     0.75     1.92        48.00    56.00       12.00     12.00
      803     21.29    21.50     1.96     1.25        70.00    58.00       12.00     12.00
      804     21.25    22.92     1.17     3.50        56.00    61.00       12.00     12.00
      811     23.25    24.17     4.29     3.25        48.00    54.00       12.00     12.00
      812     22.33    23.50     1.92     3.92        55.00    65.00       12.00     12.00
      813     22.54    23.17     2.71     3.50        54.00    62.00       12.00     12.00
      814     21.92    23.17     2.92     3.33        52.00    56.00       12.00     12.00
      821     21.25    22.58     0.75     3.25        52.00    55.00       12.00     12.00
      822     20.50    23.88     0.75     3.92        46.00    53.00       12.00     12.00


                MEAN AGE            MEAN LOS            MEAN AFQT          MEAN EDUCATION
     TIME    REPORT   DEPART     REPORT DEPART       REPORT   DEPART      REPORT    DEPART
      801     22.17    25.16     2.51     5.57        59.79    60.73       12.01     11.96
      802     21.82    23.90     2.11     4.25        49.96    57.76       11.81     11.99
      803     21.80    23.44     2.14     3.17        65.69    58.00       11.81     12.06
      804     23.09    25.47     3.40     5.70        56.86    60.07       11.47     11.97
      811     26.92    25.98     7.10     5.68        47.08    53.09       11.75     11.99
      812     23.49    24.68     3.42     4.59        53.89    60.86       11.93     11.88
      813     24.19    24.56     4.34     4.47        53.55    61.18       11.80     11.91
      814     23.94    24.83     4.14     4.79        51.26    60.17       11.57     11.88
      821     22.75    24.89     2.40     5.03        50.72    55.83       11.81     11.67
      822     22.14    25.11     1.51     5.09        49.75    54.93       11.92     11.98
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COMPARATIVE STATISTICS CF PERSONNEL INVOLVED IN TURNOVER

UIC    04628                  SHIP NAME   AS 18 ORION

           MEDIAN AGE        MEDIAN LOS         MEDIAN AFQT       MEDIAN EDUCATION
TIME     REPORT  DEPART    REPORT DEPART      REPORT  DEPART     REPORT   DEPART
 801     21.42   23.42      2.25   3.17        54.00   58.00      12.00    12.00
 802     21.88   22.33      1.08   3.25        55.00   58.00      12.00    12.00
 803     21.75   23.58      1.58   4.00        56.00   58.00      12.00    12.00
 804     24.42   23.83      4.13   4.17        58.00   60.00      12.00    12.00
 811     21.25   22.96      2.42   3.67        63.00   58.00      12.00    12.00
 812     21.50   23.17      1.08   3.25        58.00   62.00      12.00    12.00
 813     20.92   23.00      0.92   3.33        54.50   56.00      12.00    12.00
 814     20.96   22.83      1.33   3.67        57.00   60.00      12.00    12.00
 821     20.58   23.00      1.08   3.58        51.50   55.00      12.00    12.00
 822     20.50   22.75      1.00   3.50        52.00   56.00      12.00    12.00


            MEAN AGE          MEAN LOS           MEAN AFQT         MEAN EDUCATION
TIME     REPORT  DEPART    REPORT DEPART      REPORT  DEPART     REPORT   DEPART
 801     23.77   25.12      4.24   5.19        55.73   56.04      11.96    11.95
 802     23.89   24.93      4.13   5.72        56.42   56.77      11.92    11.74
 8C3     23.58   25.31      3.63   5.55        58.16   60.34      11.72    11.77
 804     26.45   25.78      6.57   5.79        56.29   58.45      12.03    11.89
 811     22.99   25.42      3.22   5.87        60.00   56.70      11.87    11.85
 812     23.78   24.17      3.47   4.25        57.27   60.05      11.97    11.92
 813     22.09   24.65      2.20   5.20        54.21   57.73      11.85    11.96
 814     23.28   24.54      3.48   5.01        55.10   60.03      11.79    11.88
 821     22.30   24.99      2.57   5.30        52.28   57.69      11.87    11.88
 822     22.76   24.74      3.04   4.99        52.86   57.65      11.97    11.90
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        COMPARATIVE  STATISTICS  CF  PERSONNEL  INVOLVED  IN  TURNOVER

   UIC    04637                  SHIP  NAME    AD 17 PIEDMONT

           MEDIAN AGE          MEDIAN LOS           MEDIAN AFQT          MEDIAN  EDUCATION
TIME     REPORT   DEPART     REPORT  DEPART       REPORT   DEPART       REPORT    DEPART
 801      20.25    23.00      0.75    2.83         53.00    60.00        12.00     12.00
 802      20.42    22.71      0.83    3.21         67.00    60.00        12.00     12.00
 803      21.25    21.08      1.21    2.00         57.00    69.00        12.00     12.00
 804      21.75    22.21      2.42    2.54         55.00    64.00        12.00     12.00
 811      20.92    23.33      1.33    3.75         56.00    56.00        12.00     12.00
 812      20.92    23.33      1.17    3.58         60.00    58.00        12.00     12.00
 813      20.92    22.58      1.00    3.29         62.00    62.00        12.00     12.00
 814      21.46    22.83      1.42    3.00         52.00    64.00        12.00     12.00
 821      21.83    23.50      1.67    3.75         52.00    57.00        12.00     12.00
 822      22.75    23.29      2.13    3.92         55.50    62.00        12.00     12.00


            MEAN  AGE           MEAN LOS             MEAN  AFQT           MEAN  EDUCATION
TIME     REPORT   DEPART     REPORT  DEPART       REPORT   DEPART       REPORT    DEPART
 801      21.73    24.41      2.34    4.55         54.67    59.63        11.72     11.73
 802      22.17    24.39      2.71    4.97         65.60    58.09        11.91     11.73
 803      23.34    22.99      3.78    3.68         59.80    67.20        11.73     11.83
 804      23.96    24.19      4.20    4.34         55.48    62.84        11.55     11.99
 811      22.85    25.74      3.23    5.91         58.21    56.17        11.86     11.92
 812      22.97    24.68      3.51    5.00         63.26    57.17        11.90     11.76
 813      23.21    24.79      3.39    5.03         60.26    62.71        11.74     11.82
 814      23.88    24.46      3.50    4.43         51.48    63.60        12.01     11.96
 821      24.17    25.27      3.83    5.44         50.20    57.29        11.81     11.90
 822      24.39    24.82      4.50    5.06         56.16    61.28        12.04     11.72
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              COMPARATIVE  STATISTICS  OF  PERSONNEL  INVOLVED  IN  TURNOVER

      UIC    04665                    SHIP  NAME   DDG 33 PARSONS

               MEDIAN AGE          MEDIAN LOS          MEDIAN AFQT        MEDIAN  EDUCATION
TIME         REPORT   DEPART     REPORT  DEPART      REPORT   DEPART      REPORT    DEPART
 801          21.67    22.83       1.38    2.92       51.50    60.00       12.00     12.00
 802          21.33    22.50       1.67    3.00       56.50    58.00       12.00     12.00
 803          19.83    22.71       1.58    3.33       62.00    68.00       12.00     12.00
 804          20.33    22.58       1.25    3.42       55.00    58.00       12.00     12.00
 811          23.58    22.75       3.63    3.08       60.00    58.00       12.00     12.00
 812          22.50    23.75       2.29    4.25       59.50    60.00       12.00     12.00
 813          21.67    23.17       2.50    3.33       65.00    65.00       12.00     12.00
 814          21.21    24.25       2.21    4.25       55.50    61.50       12.00     12.00
 821          24.33    23.46       3.71    4.25       52.50    63.50       12.00     12.00
 822          23.25    23.13       2.75    3.79       59.00    60.00       12.00     12.00


                MEAN  AGE           MEAN  LOS          MEAN  AFQT         MEAN  EDUCATION
TIME         REPORT   DEPART     REPORT  DEPART      REPORT   DEPART      REPORT   DEPART
 801          23.24    24.62       3.30    4.48       55.50    59.83       12.13    12.04
 802          23.24    24.62       3.55    4.72       58.99    58.74       11.90    11.75
 803          22.62    23.99       4.13    4.44       64.35    65.08       11.30    11.74
 804          23.03    24.23       3.71    4.79       56.03    58.46       11.45    11.90
 811          25.22    25.25       5.66    5.72       58.60    59.57       11.73    11.80
 812          25.31    25.65       5.03    5.89       56.58    59.72       12.03    11.94
 813          22.80    25.08       3.24    5.13       60.65    63.87       11.80    11.98
 814          23.64    26.45       4.05    6.52       57.18    61.88       11.52    11.71
 821          25.24    24.46       5.35    4.86       54.93    63.73       11.93    11.87
 822          24.51    23.96       4.58    4.67       58.51    58.96       11.79    11.93
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          COMPARATIVE  STATISTICS  OF  PERSONNEL  INVOLVED  IN  TURNOVER

   UIC     04666                    SHIP  NAME   DD 950  RICHARD  EDWARDS

             MEDIAN AGE          MEDIAN LOS          MEDIAN AFQT        MEDIAN  EDUCATION
  TIME      REPORT  DEPART      REPORT  DEPART      REPORT  DEPART      REPORT  DEPART
   801       21.50   21.42       1.75    2.83       65.00   58.00       12.00   12.00
   802       20.50   21.83       0.92    2.92       58.00   61.00       12.00   12.00
   803       20.33   22.42       1.13    3.08       54.00   60.00       12.00   12.00
   804       20.71   22.67       1.17    3.58       55.00   58.00       12.00   12.00
   811       22.58   22.33       2.00    3.00       62.00   64.00       12.00   12.00
   812       21.50   25.25       1.67    3.83       64.00   60.00       12.00   12.00
   813       23.17   23.33       3.25    3.25       58.00   58.00       12.00   12.00
   814       25.33   22.92       4.29    4.17       53.00   62.00       12.00   12.00
   821       21.04   23.04       1.17    3.38       54.00   67.00       12.00   12.00
   822       21.42   23.50       1.83    3.75       58.00   62.00       12.00   12.00


              MEAN  AGE          MEAN  LOS            MEAN  AFQT        MEAN  EDUCATION
  TIME      REPORT  DEPART      REPORT  DEPART      REPORT  DEPART      REPORT  DEPART
   801       23.82   23.11       3.97    3.71       66.95   56.80       11.90   11.52
   802       21.86   23.06       2.35    3.65       56.81   60.03       11.78   11.77
   803       21.82   23.51       2.44    3.94       57.15   61.14       11.80   12.00
   804       21.84   24.59       2.36    4.88       58.00   60.16       11.92   11.75
   811       22.99   24.69       2.90    4.50       62.04   60.24       11.76   12.16
   812       22.45   25.76       2.68    5.57       60.26   62.57       11.83   12.06
   813       24.71   25.27       4.86    5.59       59.59   62.55       12.07   11.85
   814       26.69   23.97       6.45    4.33       53.66   62.66       11.79   12.11
   821       21.74   24.52       2.65    4.55       55.19   66.18       11.88   12.00
   822       22.77   24.73       3.37    4.69       55.33   61.91       11.76   12.05
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        COMPARATIVE STATISTICS OF PERSONNEL INVOLVED IN TURNOVER
   UIC    04674              SHIP NAME   DDG 8 LYNDE MCCORMICK

            MEDIAN AGE        MEDIAN LOS         MEDIAN AFQT       MEDIAN EDUCATION
TIME      REPORT  DEPART    REPORT DEPART      REPORT  DEPART     REPORT   DEPART
 801      21.50   23.17      2.83    4.42      56.00   65.00      12.00    12.00
 802      21.88   23.58      2.63    4.04      54.00   60.00      12.00    12.00
 803      24.25   23.13      4.00    3.92      69.00   62.00      12.00    12.00
 804      21.25   22.08      2.04    3.08      61.00   64.50      12.00    12.00
 811      22.08   23.17      1.92    4.00      54.00   62.00      12.00    12.00
 812      22.33   23.42      1.88    3.75      62.00   65.00      12.00    12.00
 813      20.92   24.38      1.25    4.25      67.00   66.50      12.00    12.00
 814      23.17   23.67      1.50    4.25      62.00   67.00      12.00    12.00
 821      22.50   22.92      3.00    3.83      65.00   62.00      12.00    12.00
 822      21.96   22.83      2.17    3.33      62.50   59.00      12.00    12.00


             MEAN AGE          MEAN LOS           MEAN AFQT         MEAN EDUCATION
TIME      REPORT  DEPART    REPORT DEPART      REPORT  DEPART     REPORT   DEPART
 801      23.40   24.41      4.29    5.16      54.84   61.68      11.71    11.94
 802      23.55   24.75      4.22    5.04      56.62   60.73      11.64    12.02
 803      24.74   25.17      5.57    5.56      64.81   61.04      11.95    11.83
 804      22.99   23.61      3.38    4.25      62.18   63.67      11.50    11.64
 811      23.21   25.03      2.91    5.46      51.82   65.22      11.90    11.85
 812      23.97   25.57      3.80    5.31      62.28   60.94      12.22    11.95
 813      22.70   25.96      2.46    6.18      64.49   61.77      11.69    12.08
 814      23.69   24.95      3.76    5.12      58.53   65.51      11.67    11.89
 821      24.95   24.98      4.88    5.64      62.55   58.93      11.68    11.75
 822      23.68   24.60      2.95    4.77      59.44   61.63      11.90    12.04
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           COMPARATIVE STATISTICS CF PERSONNEL INVOLVED IN TURNOVER

      UIC    0 4689                SHIP NAME   AS 31 HUNLEY

              MEDIAN AGE          MEDIAN LOS           MEDIAN AFQT         MEDIAN EDUCATION
   TIME     REPORT  DEPART     REPORT DEPART        REPORT   DEPART      REPORT    DEPART
    8C1      20.38   22.67      1.04    3.42         54.00    60.00       12.00     12.00
    8C2      20.67   22.75      1.00    3.17         52.00    58.00       12.00     12.00
    803      22.00   25.50      3.08    4.67         56.00    60.00       12.00     12.00
    804      21.58   24.33      1.00    4.42         55.00    61.00       12.00     12.00
    811      20.83   23.08      1.58    3.46         60.00    69.00       12.00     12.00
    812      21.92   23.00      2.00    3.04         64.00    62.00       12.00     12.00
    813      22.92   23.21      2.33    3.75         75.00    58.00       12.00     12.00
    814      22.67   22.96      2.25    4.13         62.00    65.00       12.00     12.00
    821      20.75   23.75      0.83    4.33         47.00    62.00       12.00     12.00
    822      24.33   22.83      4.92    3.75         63.00    56.00       12.00     12.00


               MEAN AGE            MEAN LOS             MEAN AFQT          MEAN EDUCATION
   TIME     REPORT  DEPART     REPORT DEPART        REPORT   DEPART      REPORT    DEPART
    801      21.93   24.43      2.42    4.97         56.85    61.34       11.79     11.89
    802      23.23   24.23      3.61    4.55         51.40    58.53       11.76     11.89
    803      23.88   26.43      4.29    6.32         55.75    57.72       11.78     12.06
    804      23.57   26.10      3.72    6.36         57.81    58.80       11.57     12.00
    811      23.30   24.54      3.89    4.95         58.03    66.61       11.88     11.95
    812      24.80   24.58      5.06    4.72         60.72    61.81       11.88     11.89
    813      24.72   25.15      4.68    5.30         69.07    59.90       11.88     11.91
    814      24.60   25.33      4.28    5.77         59.98    62.93       11.84     12.00
    821      23.71   25.50      3.90    5.64         50.68    60.91       12.02     11.94
    822      26.29   25.00      6.54    5.31         61.33    57.43       11.96     11.84
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          COMPARATIVE  STATISTICS  OF  PERSONNEL  INVOLVED  IN  TURNOVER

   UIC    04698                    SHIP  NAME   FFG 5 RICHARD L PAGE

             MEDIAN AGE          MEDIAN LOS          MEDIAN AFQT        MEDIAN  EDUCATION
 TIME      REPORT   DEPART     REPORT  DEPART      REPORT   DEPART     REPORT    DEPART
  801       22.25    22.67      1.75    3.21        57.00    66.00      12.00     12.00
  802       20.63    21.50      1.17    2.67        61.00    62.00      12.00     12.00
  803       21.00    22.63      1.21    3.33        53.50    63.00      12.00     12.00
  804       23.50    22.58      3.58    3.67        54.00    65.00      12.00     12.00
  811       20.00    23.00      0.92    3.46        65.50    64.00      12.00     12.00
  812       21.25    22.33      1.83    3.25        58.00    60.00      12.00     12.00
  813       22.58    22.25      2.08    2.67        67.00    64.00      12.00     12.00
  814       21.92    22.63      2.21    2.54        57.50    64.50      12.00     12.00
  821       20.67    23.25      1.25    3.96        74.00    58.00      12.00     12.00
  822       22.33    23.63      1.04    4.08        52.00    62.00      12.00     12.00


              MEAN AGE            MEAN LOS            MEAN AFQT         MEAN  EDUCATION
 TIME      REPORT   DEPART     REPORT  DEPART      REPORT   DEPART     REPORT    DEPART
  801       22.85    23.46      2.69    3.70        59.59    63.61      12.04     11.68
  802       23.26    23.29      3.80    4.32        55.00    63.29      11.67     11.68
  803       22.89    24.85      3.25    5.11        55.28    59.93      11.63     12.00
  804       25.91    24.13      5.28    4.76        60.35    61.14      11.65     11.64
  811       20.37    24.57      1.38    4.94        64.15    64.90      11.85     11.75
  812       22.39    24.29      3.31    4.57        57.33    58.81      11.94     11.94
  813       24.17    23.84      4.15    4.16        60.56    63.91      11.88     12.17
  814       24.51    24.07      4.77    4.08        54.27    63.60      11.80     12.10
  821       22.44    26.26      2.10    6.56        70.68    57.82      12.08     11.90
  822       23.91    25.12      4.19    5.35        53.14    59.84      12.02     11.91
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         COMPARATIVE STATISTICS OF PERSONNEL INVOLVED IN TURNOVER

   UIC    04951                  SHIP NAME   AO 51 ASHTABULA

            MEDIAN AGE         MEDIAN LOS          MEDIAN AFQT       MEDIAN EDUCATION
TIME      REPORT  DEPART     REPORT DEPART       REPORT  DEPART      REPORT  DEPART
 801       22.13   21.88      2.54   2.67         51.00   54.50       12.00   12.00
 802       21.17   21.58      1.67   2.83         55.00   58.00       12.00   12.00
 803       21.67   22.00      1.00   2.83         50.00   52.00       12.00   12.00
 804       20.67   22.96      1.42   3.21         50.00   61.00       12.00   12.00
 811       21.50   22.00      1.58   2.75         46.00   56.00       12.00   12.00
 812       21.25   22.75      1.04   3.33         45.50   60.00       12.00   12.00
 813       21.33   23.42      0.92   3.50         54.00   50.00       12.00   12.00
 814       22.58   23.00      1.25   3.33         49.00   60.00       12.00   12.00
 821       19.96   23.38      0.67   3.50         43.50   51.00       12.00   12.00
 822       21.67   24.33      0.92   3.92         55.00   53.00       12.00   12.00


             MEAN AGE           MEAN LOS           MEAN AFQT         MEAN EDUCATION
TIME      REPORT  DEPART     REPORT DEPART       REPORT  DEPART      REPORT  DEPART
 801       23.79   22.70      3.81   3.08         49.54   56.65       11.54   11.73
 802       23.26   23.05      3.30   3.70         56.47   59.89       11.74   11.80
 803       25.09   23.40      4.84   4.21         48.66   53.36       11.51   11.65
 804       21.95   24.72      2.55   4.82         52.78   57.84       11.53   11.60
 811       23.55   23.91      3.31   4.06         48.70   55.31       11.78   11.75
 812       23.18   24.20      3.09   4.53         46.00   59.63       11.82   11.69
 813       22.51   24.57      2.83   4.54         51.11   53.98       11.67   12.11
 814       24.77   24.23      3.71   4.38         53.86   59.05       12.35   11.89
 821       22.24   26.66      2.15   6.29         45.10   53.57       12.05   11.90
 822       22.63   25.74      2.52   5.72         50.95   54.68       12.16   11.95
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         COMPARATIVE STATISTICS CF PERSONNEL INVOLVED IN TURNOVER

   UIC    0 5604                SHIP NAME  SS 581 BLUEBACK

             MEDIAN AGE          MEDIAN LOS          MEDIAN AFQT       MEDIAN EDUCATION
 TIME      REPORT   DEPART    REPORT  DEPART      REPORT   DEPART     REPORT   DEPART
  801       21.96    22.08      1.71    2.79       67.50    72.00      12.00    12.00
  802       22.29    22.67      3.17    3.67       69.00    62.00      12.00    12.00
  803       21.58    24.00      3.25    4.17       64.00    75.00      12.00    12.00
  804       22.08    22.25      2.67    3.33       55.00    73.00      12.00    12.00
  811       20.17    23.17      1.25    4.42       59.50    64.00      12.00    12.00
  812       20.67    25.25      1.75    5.08       73.00    53.50      12.00    12.00
  813       23.67    23.42      3.29    3.92       71.00    69.00      12.00    12.00
  814       24.00    22.21      2.50    3.88       62.00    67.00      12.00    12.00
  821       21.00    22.75      1.50    4.33       58.00    67.00      12.00    12.00
  822       23.71    23.58      5.71    4.83       63.50    65.00      12.00    12.00


              MEAN AGE            MEAN LOS            MEAN AFQT        MEAN EDUCATION
 TIME      REPORT   DEPART    REPORT  DEPART      REPORT   DEPART     REPORT   DEPART
  801       23.77    23.05      3.68    4.09       65.30    68.33      12.00    11.67
  802       24.84    26.56      4.64    6.78       60.55    57.43      11.95    12.14
  803       21.83    24.11      3.63    5.03       62.40    69.92      12.20    11.77
  804       22.08    25.77      2.67    4.96       55.00    70.89      12.00    11.56
  811       21.83    26.27      3.48    6.46       59.67    60.80      11.58    11.67
  812       21.16    27.76      2.20    7.18       71.33    54.42      11.73    12.08
  813       25.96    24.91      6.06    5.51       63.42    65.22      12.17    11.61
  814       26.88    24.88      6.46    6.07       60.31    67.30      12.06    11.30
  821       23.95    23.87      6.39    4.56       59.67    67.53      11.44    11.94
  822       26.03    25.64      7.46    6.67       59.33    62.95      11.50    11.74
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          COMPARATIVE  STATISTICS  CF  PERSONNEL  INVOLVED  IN  TURNOVER

    UIC    0 5833                    SHIP NAME  AOE 2 CAMDEN

               MEDIAN AGE          MEDIAN LOS          MEDIAN AFQT        MEDIAN EDUCATION
 TIME       REPORT   DEPART     REPORT  DEPART      REPORT   DEPART     REPORT   DEPART
  801        21.42    22.42      2.67    2.75        55.00    58.00      12.00    12.00
  802        21.00    22.42      2.25    3.00        55.00    60.00      12.00    12.00
  803        20.92    22.92      1.83    3.17        56.00    60.00      12.00    12.00
  804        20.96    22.58      0.96    3.17        55.00    60.00      12.00    12.00
  811        21.54    22.54      2.42    3.42        54.50    55.00      12.00    12.00
  812        20.50    22.50      0.83    3.25        54.00    60.00      12.00    12.00
  813        21.00    22.08      1.00    2.92        50.00    62.00      12.00    12.00
  814        21.58    22.67      3.00    2.79        54.00    65.00      12.00    12.00
  821        20.88    22.75      0.88    3.67        47.50    64.00      12.00    12.00
  822        21.42    22.58      1.00    3.42        50.00    66.50      12.00    12.00


                MEAN AGE            MEAN LOS            MEAN AFQT          MEAN EDUCATION
 TIME       REPORT   DEPART     REPORT  DEPART      REPORT   DEPART     REPORT   DEPART
  801        23.74    24.08      4.20    4.56        54.93    59.85      11.49    11.84
  802        22.26    24.38      2.95    4.92        58.58    58.82      11.74    11.67
  803        21.90    23.65      2.63    4.09        57.13    60.60      11.38    11.57
  804        22.81    24.09      2.92    4.29        58.50    61.00      11.74    11.88
  811        22.67    23.97      3.01    4.35        54.67    58.29      11.67    11.81
  812        22.50    23.85      3.06    4.21        56.55    60.47      11.90    11.59
  813        23.78    24.43      3.72    4.78        51.85    61.76      11.65    11.87
  814        22.91    23.88      3.34    4.36        56.35    64.37      11.74    11.85
  821        22.80    24.55      2.99    5.00        50.48    60.71      11.78    11.71
  822        22.55    24.07      3.06    4.37        53.22    64.02      11.66    11.90
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        COMPARATIVE  STATISTICS  CF  PERSONNEL  INVOLVED  IN  TURNOVER

    UIC     05836                  SHIP NAME   AFS 5 CONCORD

               MEDIAN AGE          MEDIAN LOS          MEDIAN AFQT       MEDIAN EDUCATION
 TIME      REPORT   DEPART     REPORT DEPART       REPORT   DEPART     REPORT   DEPART
  801       21.50    23.33      0.92    3.50        57.00    56.00      12.00    12.00
  802       20.88    21.58      0.79    2.83        54.00    62.00      12.00    12.00
  803       22.00    22.58      1.25    2.92        52.00    56.00      12.00    12.00
  804       20.79    22.83      1.08    3.00        56.00    65.00      12.00    12.00
  811       20.88    22.67      1.13    3.38        51.00    54.50      12.00    12.00
  812       20.00    23.38      0.75    3.38        49.00    60.00      12.00    12.00
  813       24.33    22.17      5.25    2.67        50.00    64.00      12.00    12.00
  814       21.08    23.42      1.25    3.83        62.00    66.00      12.00    12.00
  821       21.21    23.25      1.00    4.17        51.00    64.00      12.00    12.00
  822       22.71    22.42      1.29    3.25        54.00    56.00      12.00    12.00


                MEAN AGE            MEAN LOS            MEAN AFQT        MEAN EDUCATION
 TIME      REPORT   DEPART     REPORT DEPART       REPORT   DEPART     REPORT   DEPART
  801       23.30    24.34      2.90    4.74        56.58    57.42      11.78    11.65
  802       22.80    23.87      3.17    5.00        53.75    59.27      11.75    11.83
  803       22.84    23.65      3.06    3.81        55.64    58.80      11.93    11.96
  804       22.90    24.46      3.08    3.77        53.00    65.16      11.68    12.01
  811       22.69    24.24      3.55    4.60        51.58    56.26      11.73    11.68
  812       21.41    24.41      1.86    4.39        49.16    59.94      11.70    11.85
  813       26.67    23.57      6.45    3.77        48.39    63.98      11.87    12.02
  814       22.16    24.56      2.47    4.73        62.03    62.26      11.66    11.97
  821       22.18    25.94      2.47    6.34        53.97    59.49      11.78    11.86
  822       24.01    24.79      3.83    4.66        54.07    56.48      12.14    11.91
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                COMPARATIVE  STATISTICS  OF  PERSONNEL  INVOLVED  IN  TURNOVER

     UIC    05847                  SHIP NAME  LKA 116 ST LOUIS

               MEDIAN AGE          MEDIAN LOS           MEDIAN AFQT       MEDIAN  EDUCATION
  TIME      REPORT   DEPART     REPORT  DEPART      REPORT   DEPART      REPORT    DEPART
   801       22.25    23.08      1.25     3.58       47.00    49.00       12.00     12.00
   802       20.92    23.17      1.08     3.33       58.00    65.00       12.00     12.00
   803       21.29    22.21      1.71     3.58       60.00    57.00       12.00     12.00
   804       20.83    22.38      0.83     2.88       56.00    58.00       12.00     12.00
   811       20.25    22.00      0.83     3.33       43.00    60.00       12.00     12.00
   812       22.46    23.42      1.96     3.42       50.50    55.00       12.00     12.00
   813       21.79    22.67      1.17     2.33       46.00    65.00       12.00     12.00
   814       22.38    23.42      2.17     4.42       57.00    62.00       12.00     12.00
   821       20.13    23.71      1.54     3.58       54.00    55.50       12.00     12.00
   822       21.92    23.33      0.83     3.83       52.00    57.00       12.00     12.00


                MEAN  AGE           MEAN LOS             MEAN  AFQT        MEAN  EDUCATION
  TIME      REPORT   DEPART     REPORT  DEPART      REPORT   DEPART      REPORT    DEPART
   801       24.23    25.46      3.88     5.95       48.88    52.61       11.98     11.85
   802       21.69    24.86      2.34     5.08       59.78    60.60       11.76     11.72
   803       22.53    24.91      3.30     5.09       58.65    58.26       11.57     11.82
   804       22.08    23.54      2.31     3.88       59.91    58.91       11.53     11.86
   811       22.42    23.95      2.99     4.68       49.63    59.98       12.11     11.75
   812       24.73    25.33      4.30     5.07       50.91    53.44       11.94     11.89
   813       23.77    23.55      3.82     4.02       48.68    62.17       11.86     11.98
   814       24.05    26.20      4.47     6.43       56.77    59.94       11.58     11.80
   821       22.09    24.58      2.85     4.68       54.72    59.52       11.50     12.12
   822       23.27    25.60      2.61     5.34       51.42    56.29       11.81     11.96
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          COMPARATIVE  STATISTICS  OF PERSONNEL  INVOLVED  IN  TURNOVER

    UIC     07183                  SHIP NAME   LPD 9 DENVER

                MEDIAN AGE          MEDIAN LCS         MEDIAN AFQT        MEDIAN  EDUCATION
  TIME       REPORT   DEPART     REPORT DEPART      REPORT   DEPART      REPORT    DEPART
   801        21.42    22.38      1.50    2.46       55.50    58.00       12.00     12.00
   802        21.33    22.92      1.17    3.33       50.00    55.00       12.00     12.00
   803        22.00    22.08      1.83    2.08       56.00    58.00       12.00     12.00
   804        20.38    22.79      0.83    3.50       55.50    58.00       12.00     12.00
   811        20.25    22.92      0.92    3.83       55.00    62.00       12.00     12.00
   812        20.67    22.92      1.04    3.75       55.50    56.00       12.00     12.00
   813        22.08    23.25      2.00    3.17       53.50    55.00       12.00     12.00
   814        22.21    22.92      2.67    4.25       56.00    52.00       12.00     12.00
   821        21.92    23.33      1.75    4.25       59.00    58.00       12.00     12.00
   822        22.25    23.17      1.00    3.75       49.00    60.00       12.00     12.00


                 MEAN  AGE           MEAN LOS            MEAN AFQT         MEAN  EDUCATION
  TIME       REPORT   DEPART     REPORT DEPART      REPORT   DEPART      REPORT    DEPART
   801        22.91    23.63      2.99    3.81       58.81    59.00       12.06     11.93
   802        22.43    24.03      3.17    4.51       52.05    56.52       11.64     11.90
   803        23.44    23.49      3.38    3.70       59.13    59.93       11.64     12.00
   804        21.87    23.99      2.41    4.54       54.05    59.58       11.59     11.66
   811        22.12    24.83      2.23    5.24       55.06    59.73       11.55     11.70
   812        22.04    25.65      2.56    6.04       56.31    58.30       11.87     11.96
   813        24.46    25.66      3.78    5.27       52.89    56.77       11.91     12.04
   814        23.56    24.50      3.94    5.08       57.25    55.33       11.90     11.77
   821        23.22    23.77      3.42    4.29       58.98    57.42       11.98     11.85
   822        23.70    24.72      3.26    4.43       50.56    61.49       11.77     11.96
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           COMPARATIVE STATISTICS CF PERSONNEL INVOLVED IN TURNOVER
     UIC     07351              SHIP NAME  LPH 3 OKINAWA

             MEDIAN AGE         MEDIAN LOS         MEDIAN AFQT      MEDIAN EDUCATION
TIME       REPORT  DEPART     REPORT DEPART      REPORT  DEPART     REPORT   DEPART
 801       21.25   22.83      1.67    3.50       49.00   60.00      12.00    12.00
 802       20.71   23.58      1.00    3.33       53.00   60.00      12.00    12.00
 803       21.42   22.42      1.92    3.25       55.00   55.00      12.00    12.00
 804       21.04   23.13      1.17    3.00       54.50   62.00      12.00    12.00
 811       21.17   22.46      1.58    3.71       52.00   62.00      12.00    12.00
 812       20.50   22.83      1.00    3.54       55.00   55.00      12.00    12.00
 813       21.08   24.88      1.67    4.00       52.00   56.00      12.00    12.00
 814       23.92   23.08      3.00    4.25       50.00   58.00      12.00    12.00
 821       21.92   23.50      1.67    3.75       46.00   64.00      12.00    12.00
 822       22.00   23.17      1.08    4.04       56.00   63.00      12.00    12.00


              MEAN AGE           MEAN LOS           MEAN AFQT        MEAN EDUCATION
TIME       REPORT  DEPART     REPORT DEPART      REPORT  DEPART     REPORT   DEPART
 801       23.21   24.59      3.43    4.98       50.98   58.20      11.91    11.87
 802       22.84   25.47      3.39    5.48       53.59   60.74      11.82    11.78
 803       23.03   23.89      3.04    4.40       58.17   53.02      11.91    11.88
 804       23.29   24.47      3.68    4.39       56.05   63.63      11.51    12.03
 811       23.21   24.37      3.68    4.97       53.59   61.36      12.04    11.72
 812       21.98   24.42      2.40    4.64       55.91   55.20      11.73    11.85
 813       22.37   25.95      3.12    5.31       52.37   57.69      11.68    11.94
 814       26.43   24.81      6.12    5.27       51.20   58.70      11.94    11.76
 821       24.66   25.41      4.85    5.40       48.57   61.13      12.00    12.09
 822       24.67   24.93      4.64    5.21       55.65   61.49      11.84    11.72
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COMPARATIVE STATISTICS OF PERSONNEL INVOLVED IN TURNOVER

UIC 08808 SHIP NAME AR 5 VULCAN

	MEDIAN AGE		MEDIAN LOS		MEDIAN AFQT		MEDIAN EDUCATION	
TIME	REPORT	DEPART	REPORT	DEPART	REPORT	DEPART	REPORT	DEPART
801	20.00	23.17	0.83	3.17	52.00	59.00	12.00	12.00
802	21.42	22.42	1.21	2.75	55.00	59.00	12.00	12.00
803	21.92	22.33	2.00	3.25	54.00	60.00	12.00	12.00
804	22.33	22.46	1.92	2.96	56.00	60.50	12.00	12.00
811	21.71	23.75	1.33	3.00	62.00	61.00	12.00	12.00
812	21.83	23.29	1.00	4.04	62.00	57.00	12.00	12.00
813	21.75	22.33	1.21	2.63	64.00	62.50	12.00	12.00
814	21.92	24.29	1.25	4.25	56.00	64.00	12.00	12.00
821	22.08	22.67	1.08	2.50	59.00	62.00	12.00	12.00
822	21.21	23.17	1.54	3.83	59.00	58.00	12.00	12.00

	MEAN AGE		MEAN LOS		MEAN AFQT		MEAN EDUCATION	
TIME	REPORT	DEPART	REPORT	DEPART	REPORT	DEPART	REPORT	DEPART
801	20.69	24.71	1.32	4.72	53.86	60.04	11.79	11.84
802	22.91	24.80	3.24	5.25	54.23	60.70	11.87	11.75
803	23.86	24.38	4.01	4.78	55.85	60.69	11.72	11.76
804	24.04	23.75	3.85	3.85	57.57	62.83	11.89	11.94
811	23.25	25.49	3.25	5.21	60.68	60.28	11.89	11.84
812	23.66	24.82	3.54	5.12	61.12	58.23	11.77	11.88
813	23.42	24.12	3.34	4.49	62.08	62.25	11.94	11.78
814	23.88	26.36	3.56	5.96	56.73	61.52	11.88	12.01
821	23.87	24.51	3.83	4.41	56.84	59.06	12.12	11.87
822	23.05	25.17	3.51	5.13	60.32	59.70	11.84	11.80

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        COMPARATIVE  STATISTICS  CF  PERSONNEL  INVOLVED  IN  TURNOVER

   UIC     08809                  SFIP  NAME   AR 7 HECTOR

              MEDIAN AGE           MEDIAN LCS          MEDIAN AFQT        MEDIAN  EDUCATION
TIME       REPORT   DEPART      REPORT  DEPART      REPORT   DEPART      REPORT    DEPART
 801        20.79    22.50       1.88    2.75        55.00    59.00       12.00     12.00
 802        21.58    22.58       2.83    2.83        52.00    60.00       12.00     12.00
 803        22.33    22.33       2.92    3.17        56.00    55.00       12.00     12.00
 804        21.67    24.13       2.67    3.38        54.50    61.00       12.00     12.00
 811        21.58    23.38       2.25    3.83        58.00    58.50       12.00     12.00
 812        21.92    23.92       1.33    4.00        54.00    56.00       12.00     12.00
 813        22.67    22.96       2.42    3.79        55.00    59.00       12.00     12.00
 814        21.54    23.50       1.96    3.54        57.50    58.00       12.00     12.00
 821        24.50    24.17       3.75    4.33        48.00    58.00       12.00     12.00
 822        23.42    23.83       2.58    4.33        50.00    57.00       12.00     12.00


               MEAN  AGE            MEAN  LOS           MEAN  AFQT         MEAN  EDUCATION
TIME       REPORT   DEPART      REPORT  DEPART      REPORT   DEPART      REPORT    DEPART
 801        21.91    24.21       2.80    4.55        56.13    58.59       11.71     11.90
 802        22.63    24.57       3.42    4.86        54.59    58.94       11.52     11.83
 803        23.72    24.37       3.67    4.58        56.03    56.85       11.81     12.02
 804        23.82    25.63       4.43    5.43        54.73    61.25       11.56     11.86
 811        23.19    25.21       3.53    5.23        60.80    57.41       11.64     11.93
 812        23.15    24.83       3.70    4.85        56.60    55.25       11.79     11.88
 813        23.54    24.60       3.37    4.91        51.58    58.69       11.87     11.73
 814        23.22    25.22       3.15    5.30        57.05    58.17       11.82     12.04
 821        25.38    26.16       4.92    5.94        45.78    57.65       12.23     11.96
 822        24.94    25.44       4.56    5.59        49.52    58.99       12.16     11.87
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        COMPARATIVE STATISTICS OF PERSONNEL INVOLVED IN TURNOVER

  UIC   20012              SHIP NAME  LSD 37 PORTLAND

         MEDIAN AGE       MEDIAN LOS       MEDIAN AFQT     MEDIAN EDUCATION
TIME   REPORT  DEPART   REPORT DEPART    REPORT  DEPART    REPORT   DEPART
 801    22.42   22.08    1.13    2.17     58.00   54.00     12.00    12.00
 802    20.75   21.46    1.50    3.21     49.00   59.00     12.00    12.00
 803    20.58   22.58    0.92    2.25     64.00   60.00     12.00    12.00
 804    21.29   21.42    1.21    2.08     56.00   61.00     12.00    12.00
 811    21.08   23.33    1.17    4.33     54.00   55.00     12.00    12.00
 812    20.58   22.63    1.00    2.83     60.00   64.00     12.00    12.00
 813    21.17   22.83    1.25    3.25     53.00   50.00     12.00    12.00
 814    21.13   23.00    1.63    4.25     53.50   57.00     12.00    12.00
 821    21.67   23.08    0.92    3.92     56.00   56.00     12.00    12.00
 822    20.75   22.92    1.00    3.50     56.00   59.00     12.00    12.00


          MEAN AGE         MEAN LOS         MEAN AFQT      MEAN EDUCATION
TIME   REPORT  DEPART   REPORT DEPART    REPORT  DEPART    REPORT   DEPART
 801    24.04   23.37    4.08    3.48     54.60   54.85     11.37    11.81
 802    21.96   23.43    2.56    4.14     50.46   60.75     11.90    11.82
 803    22.59   23.20    2.68    3.00     63.31   59.82     12.02    11.93
 804    22.30   22.30    2.89    3.13     55.89   61.97     11.42    11.72
 811    23.01   24.99    2.84    5.48     55.44   57.85     11.81    11.90
 812    23.16   24.44    3.33    4.47     58.81   61.43     12.10    11.83
 813    22.61   24.55    3.28    5.07     55.59   56.38     11.90    11.69
 814    25.16   24.86    5.52    5.33     50.94   59.31     11.75    11.91
 821    23.78   24.39    3.77    4.71     54.06   59.25     11.66    11.62
 822    23.16   24.99    4.18    5.28     55.12   58.38     11.44    11.89
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            COMPARATIVE STATISTICS CF PERSONNEL INVOLVED IN TURNOVER

     UIC    20050                       SHIP NAME   FF 1079 BOWEN

              MEDIAN AGE           MEDIAN LCS          MEDIAN AFQT       MEDIAN EDUCATION
TIME        REPORT   DEPART      REPORT DEPART      REPORT   DEPART      REPORT   DEPART
 801         21.71    23.33        1.13    3.83      53.00    61.00       12.00    12.00
 802         20.92    22.88        1.67    3.04      56.00    55.50       12.00    12.00
 803         23.04    23.17        2.96    3.08      62.00    67.00       12.00    12.00
 804         21.21    23.42        1.38    2.75      64.50    58.00       12.00    12.00
 811         21.00    22.33        1.33    2.79      60.00    69.00       12.00    12.00
 812         23.71    24.25        3.04    5.25      60.50    64.00       12.00    12.00
 813         20.63    22.42        0.96    2.75      65.50    69.00       12.00    12.00
 814         21.17    22.83        1.42    2.79      62.00    56.00       12.00    12.00
 821         21.17    22.08        1.29    2.42      55.50    69.00       12.00    12.00
 822         21.96    23.83        3.17    4.17      58.00    62.00       12.00    12.00


               MEAN AGE             MEAN LOS            MEAN AFQT        MEAN EDUCATION
TIME        REPORT   DEPART      REPORT DEPART      REPORT   DEPART      REPORT   DEPART
 801         21.37    24.36        1.99    4.98      56.21    60.76       11.36    12.24
 802         22.97    23.52        3.63    3.93      59.47    56.58       11.60    11.63
 803         24.70    24.81        4.77    4.56      57.36    65.12       11.61    11.81
 804         23.07    25.24        3.25    5.54      60.11    57.79       11.57    11.48
 811         23.15    23.50        3.49    3.87      60.36    67.42       11.97    11.97
 812         24.73    25.81        3.91    6.18      61.00    60.12       12.04    11.81
 813         21.51    24.14        1.83    3.84      66.35    68.81       11.92    12.04
 814         24.18    23.84        3.73    4.20      59.90    57.55       11.86    11.89
 821         23.15    23.62        2.82    3.53      55.92    65.09       11.88    11.94
 822         23.69    25.45        4.33    5.54      56.42    60.40       12.00    11.89
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              COMPARATIVE STATISTICS OF PERSONNEL INVOLVED IN TURNOVER

      UIC    20058                  SHIP NAME   FF 1087 KIRK

              MEDIAN AGE          MEDIAN LOS          MEDIAN AFQT        MEDIAN EDUCATION
  TIME     REPORT  DEPART      REPORT DEPART      REPORT   DEPART      REPORT   DEPART
   801      21.96   22.46       1.46    3.50       56.50    62.00       12.00    12.00
   802      20.67   22.42       2.58    3.25       55.00    61.00       12.00    12.00
   803      21.75   23.33       1.04    3.08       71.00    66.00       12.00    12.00
   804      21.96   22.67       1.50    3.83       55.00    61.00       12.00    12.00
   811      20.67   24.04       1.29    3.33       49.50    60.00       12.00    12.00
   812      21.38   22.83       1.54    3.38       61.00    56.50       12.00    12.00
   813      25.83   21.75       5.33    3.17       53.00    58.00       12.00    12.00
   814      22.17   23.71       1.50    4.25       50.00    57.00       12.00    12.00
   821      21.25   23.54       0.92    3.50       54.00    54.50       12.00    12.00
   822      21.50   23.33       1.33    3.42       55.00    69.00       12.00    12.00


               MEAN AGE            MEAN LOS            MEAN AFQT          MEAN EDUCATION
  TIME     REPORT  DEPART      REPORT DEPART      REPORT   DEPART      REPORT   DEPART
   801      23.52   24.06       3.40    5.08       60.89    62.67       11.61    11.89
   802      23.39   24.34       4.65    4.99       57.84    58.87       11.84    11.91
   803      21.86   24.86       2.19    4.88       67.04    64.57       12.13    11.94
   804      23.53   24.80       3.20    5.35       55.18    61.74       12.12    11.79
   811      23.88   24.40       4.29    3.88       52.50    61.94       11.77    12.29
   812      22.54   24.04       3.13    4.52       61.19    60.10       12.00    11.74
   813      27.27   23.51       6.28    4.43       54.05    58.86       12.00    11.84
   814      23.37   25.78       3.52    6.03       52.08    58.26       11.95    11.97
   821      23.53   24.74       4.05    4.71       55.52    54.74       11.76    11.97
   822      22.63   24.93       2.53    5.18       54.23    62.02       11.90    12.03
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        COMPARATIVE STATISTICS CF PERSONNEL INVOLVED IN TURNOVER

   UIC    20112                  SHIP NAME   AE 29 MOUNT HOOD

           MEDIAN AGE         MEDIAN LOS           MEDIAN AFQT        MEDIAN EDUCATION
TIME     REPORT  DEPART     REPORT DEPART        REPORT   DEPART     REPORT   DEPART
 801      21.17   21.67      2.17    2.67         48.00    58.00      12.00    12.00
 802      20.88   22.71      1.00    3.21         53.00    51.00      12.00    12.00
 803      21.58   22.63      2.83    3.38         54.00    62.00      12.00    12.00
 804      21.83   22.67      2.13    2.83         56.00    62.00      12.00    12.00
 811      21.67   22.50      1.83    3.08         53.00    53.50      12.00    12.00
 812      21.83   22.08      1.92    3.17         54.00    54.00      12.00    12.00
 813      21.08   22.83      1.83    4.17         50.00    56.00      12.00    12.00
 814      22.17   22.92      0.92    3.54         50.00    58.00      12.00    12.00
 821      21.42   23.79      0.83    4.42         50.00    65.00      12.00    12.00
 822      19.83   23.21      0.75    3.33         49.00    55.00      12.00    12.00


            MEAN AGE           MEAN LOS             MEAN AFQT         MEAN  EDUCATION
TIME     REPORT  DEPART     REPORT DEPART        REPORT   DEPART     REPORT   DEPART
 801      23.00   23.57      3.42    4.20         50.06    55.98      11.83    11.76
 802      22.34   23.18      2.76    3.85         53.52    55.43      11.77    11.89
 803      23.97   24.47      4.52    4.82         54.19    59.69      11.68    11.63
 804      23.42   24.81      3.30    4.42         56.26    57.98      11.78    11.76
 811      23.01   24.35      3.32    4.48         53.12    56.52      11.69    11.94
 812      23.82   24.45      4.23    4.37         53.63    55.27      11.59    11.79
 813      23.91   24.49      4.18    4.82         50.90    57.62      11.62    11.87
 814      24.38   25.03      3.64    5.22         50.87    57.94      11.81    11.69
 821      23.24   26.10      2.76    6.18         51.02    63.54      11.88    12.07
 822      21.93   24.96      2.14    4.98         49.72    56.78      11.76    11.96
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           COMPARATIVE STATISTICS OF PERSONNEL INVOLVED IN TURNOVER

      UIC    20123                SHIP NAME  AOR 4 SAVANNAH

              MEDIAN AGE       MEDIAN LOS        MEDIAN AFQT      MEDIAN EDUCATION
   TIME     REPORT  DEPART   REPORT DEPART     REPORT  DEPART    REPORT   DEPART
    801      21.13   22.50    0.83    2.58      55.00   60.00     12.00    12.00
    802      20.33   21.54    0.92    2.00      54.00   58.00     12.00    12.00
    803      19.92   22.00    1.00    3.00      52.00   55.50     12.00    12.00
    804      23.58   21.50    2.08    2.42      62.00   56.00     12.00    12.00
    811      20.50   22.75    1.33    3.58      56.00   56.00     12.00    12.00
    812      21.71   21.67    1.88    2.67      55.00   63.00     12.00    12.00
    813      21.08   23.00    1.00    3.25      52.00   54.00     12.00    12.00
    814      20.42   22.92    1.17    3.04      60.00   58.50     12.00    12.00
    821      20.75   22.58    0.83    2.50      50.50   60.00     12.00    12.00
    822      20.08   22.75    0.92    3.25      49.00   63.00     12.00    12.00


               MEAN AGE         MEAN LOS          MEAN AFQT       MEAN EDUCATION
   TIME     REPORT  DEPART   REPORT DEPART     REPORT  DEPART    REPORT   DEPART
    801      22.22   24.49    2.71    4.52      57.68   58.54     11.61    11.91
    802      21.79   22.21    2.61    2.84      53.69   59.09     11.67    11.80
    803      21.23   23.04    1.79    3.54      50.23   58.11     11.65    11.64
    804      26.46   23.84    5.35    4.61      56.73   58.21     11.87    11.71
    811      21.89   24.25    2.21    4.49      55.13   55.93     11.84    11.80
    812      24.25   23.45    4.54    4.03      53.50   61.07     11.57    11.69
    813      22.87   24.06    2.57    4.52      56.20   55.09     12.00    11.92
    814      23.71   24.99    4.21    5.35      60.04   59.66     11.98    11.74
    821      23.29   23.72    2.77    3.69      47.48   58.78     11.67    11.86
    822      21.26   23.93    1.98    4.35      49.93   61.75     11.93    11.69
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            COMPARATIVE  STATISTICS  CF PERSONNEL  INVOLVED  IN  TURNOVER

   UIC    20143                  SFIP  NAME  ASR 21 PIGEON

           MEDIAN AGE        MEDIAN LCS         MEDIAN AFQT      MEDIAN EDUCATION
 TIME    REPORT   DEPART    REPORT DEPART      REPORT   DEPART    REPORT   DEPART
  801     22.17    25.50     2.08    4.75       52.50    78.00     12.00    12.00
  802     21.00    24.50     2.38    4.25       48.50    60.00     12.00    12.00
  803     22.25    24.00     3.33    4.33       55.00    70.00     12.00    12.00
  804     21.75    24.00     2.00    4.17       60.00    71.00     12.00    12.00
  811     22.00    24.75     2.58    4.58       58.00    64.50     12.00    12.00
  812     26.25    24.92     3.92    4.71       48.00    58.00     12.00    12.00
  813     21.33    23.50     2.08    4.25       47.00    54.00     12.00    12.00
  814     23.04    22.54     2.42    4.13       57.00    56.00     12.00    12.00
  821     20.58    24.75     2.04    4.29       74.00    65.00     12.00    12.00
  822     22.25    22.71     2.08    3.33       46.50    55.50     12.00    12.00


            MEAN  AGE         MEAN LOS           MEAN AFQT        MEAN EDUCATION
 TIME    REPORT   DEPART    REPORT DEPART      REPORT   DEPART    REPORT   DEPART
  801     22.84    25.88     3.72    6.05       54.31    65.30     11.50    11.74
  802     21.88    26.69     2.91    6.82       49.58    57.34     11.67    11.66
  803     26.10    24.94     6.44    5.84       53.65    68.84     12.06    11.81
  804     24.49    25.71     4.22    5.83       57.82    67.81     12.12    12.00
  811     24.88    26.13     4.18    6.45       52.95    59.00     11.74    12.05
  812     26.42    25.99     5.63    6.44       50.52    60.50     12.00    11.79
  813     24.37    26.04     4.84    6.25       49.40    54.64     11.47    11.79
  814     25.84    24.61     5.38    5.28       51.64    57.68     11.77    11.76
  821     23.39    26.57     3.94    6.61       64.94    62.19     11.94    12.25
  822     23.65    24.52     3.16    4.52       52.59    58.80     12.23    11.85
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          COMPARATIVE  STATISTICS  OF  PERSONNEL  INVOLVED  IN  TURNOVER

    UIC     20223                     SHIP  NAME   LST  1197  BARNSTABLE  CTY

              MEDIAN AGE            MEDIAN LOS            MEDIAN AFQT          MEDIAN  EDUCATION
   TIME     REPORT    DEPART      REPORT  DEPART        REPORT    DEPART       REPORT     DEPART
    801      20.42     22.25       0.83     2.50         47.50     69.00        12.00      12.00
    802      20.58     22.38       1.08     3.04         55.00     53.00        12.00      12.00
    803      20.17     23.00       0.75     3.67         55.00     58.00        12.00      12.00
    804      20.08     22.38       1.08     4.17         52.00     53.00        12.00      12.00
    811      20.25     23.50       0.79     3.17         50.00     58.00        12.00      12.00
    812      21.33     23.33       2.63     3.29         52.00     60.00        12.00      12.00
    813      21.00     21.88       1.00     2.50         58.00     57.00        12.00      12.00
    814      21.92     22.00       1.67     2.38         58.00     58.50        12.00      12.00
    821      21.00     22.63       0.83     3.21         51.00     58.50        12.00      12.00
    822      19.92     24.00       0.92     3.17         49.00     64.00        12.00      12.00


               MEAN  AGE             MEAN  LOS             MEAN  AFQT          MEAN  EDUCATION
   TIME     REPORT    DEPART      REPORT  DEPART        REPORT    DEPART       REPORT     DEPART
    801      21.90     23.00       2.43     3.66         49.70     66.96        11.65      11.85
    802      21.75     24.85       2.30     5.45         58.11     56.50        11.56      11.59
    803      22.01     25.11       2.50     5.88         55.59     60.32        11.26      11.73
    804      21.92     23.78       2.51     4.81         57.73     52.61        11.36      11.44
    811      22.87     25.40       3.34     5.86         45.18     56.80        11.64      11.88
    812      22.70     24.26       3.31     4.45         56.30     61.31        11.65      11.69
    813      22.80     23.88       3.49     3.83         52.72     53.78        11.68      11.78
    814      22.81     23.54       2.88     4.27         52.64     57.67        11.62      11.94
    821      23.97     24.45       4.28     5.00         52.19     58.09        11.45      11.68
    822      22.23     24.94       2.35     5.45         47.66     60.86        11.66      11.89
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          COMPARATIVE  STATISTICS  CF  PERSONNEL  INVOLVED  IN  TURNOVER

   UIC    20576                SHIP  NAME    DD 965 KINKAID

            MEDIAN AGE        MEDIAN LOS        MEDIAN AFQT      MEDIAN  EDUCATION
TIME      REPORT   DEPART    REPORT DEPART    REPORT   DEPART    REPORT   DEPART
 801       20.38    22.83     1.75    3.50     56.00    61.00     12.00    12.00
 802       21.75    23.25     2.08    2.50     60.00    59.00     12.00    12.00
 803       22.50    22.88     1.58    3.25     59.00    61.00     12.00    12.00
 804       21.42    22.46     1.33    3.13     67.00    62.00     12.00    12.00
 811       23.08    22.42     2.79    2.50     56.00    66.50     12.00    12.00
 812       21.54    24.71     1.92    4.08     61.50    60.00     12.00    12.00
 813       22.50    22.38     1.46    3.29     55.50    65.00     12.00    12.00
 814       21.58    24.00     2.08    4.17     58.00    58.50     12.00    12.00
 821       20.83    23.75     0.75    3.63     50.00    64.50     12.00    12.00
 822       21.67    23.33     1.92    3.58     56.00    60.00     12.00    12.00


             MEAN  AGE         MEAN LOS          MEAN AFQT        MEAN  EDUCATION
TIME      REPORT   DEPART    REPORT DEPART    REPORT   DEPART    REPORT   DEPART
 801       21.60    23.99     3.32    3.99     62.52    61.59     11.62    12.12
 802       22.48    25.03     2.95    4.80     61.38    57.09     11.79    11.74
 803       23.74    24.70     3.09    4.89     58.54    62.64     12.00    12.08
 804       21.82    23.66     2.12    3.82     65.56    60.90     11.72    12.05
 811       23.86    23.91     3.57    3.99     59.76    64.60     11.97    11.68
 812       23.76    25.06     4.11    5.19     59.06    59.42     11.86    12.28
 813       25.21    24.82     5.13    4.60     50.27    62.09     12.05    11.93
 814       23.53    25.50     3.55    5.57     61.61    62.75     11.81    11.98
 821       23.25    25.92     3.26    5.28     50.51    61.57     12.00    12.22
 822       25.07    25.35     4.68    5.09     54.30    60.96     11.61    11.98
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            COMPARATIVE STATISTICS OF PERSONNEL INVOLVED IN TURNOVER

    UIC    20632                SHIP NAME   LHA 2 SAIPAN

               MEDIAN AGE         MEDIAN LOS          MEDIAN AFQT      MEDIAN EDUCATION
   TIME      REPORT  DEPART     REPORT DEPART       REPORT  DEPART     REPORT   DEPART
    801       20.42   21.96      0.88    2.83        55.00   62.00      12.00    12.00
    802       20.29   22.00      0.92    3.08        53.00   56.00      12.00    12.00
    803       21.00   22.13      1.71    2.67        57.00   56.00      12.00    12.00
    804       21.67   22.21      1.50    3.17        56.00   58.00      12.00    12.00
    811       21.00   22.83      1.33    4.25        60.00   58.00      12.00    12.00
    812       21.08   23.25      1.75    4.08        53.00   58.00      12.00    12.00
    813       22.08   23.92      2.38    4.00        54.00   58.00      12.00    12.00
    814       21.46   23.46      1.50    3.79        56.00   58.00      12.00    12.00
    821       21.38   23.75      1.08    4.25        52.50   62.00      12.00    12.00
    822       21.58   22.75      1.08    3.38        54.00   55.50      12.00    12.00


                MEAN AGE           MEAN LOS            MEAN AFQT        MEAN EDUCATION
   TIME      REPORT  DEPART     REPORT DEPART       REPORT  DEPART     REPORT   DEPART
    801       21.76   24.57      2.51    5.10        55.30   63.47      11.90    11.68
    802       22.37   24.03      2.66    4.70        55.43   57.23      11.98    11.61
    803       22.65   23.65      2.92    4.16        59.09   58.48      11.69    11.77
    804       22.73   24.56      3.16    5.05        59.73   58.63      11.55    11.80
    811       22.46   24.45      2.85    4.77        59.81   61.24      11.84    11.96
    812       23.60   24.72      3.60    4.99        52.30   60.05      11.98    12.07
    813       24.95   26.02      4.93    5.93        52.61   56.93      11.95    11.83
    814       23.67   24.73      3.67    4.88        54.58   60.51      11.84    11.87
    821       23.51   25.30      3.88    5.25        51.27   61.02      11.58    11.80
    822       23.46   24.89      3.61    5.34        52.63   54.70      11.82    11.80
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        COMPARATIVE STATISTICS CF PERSONNEL INVOLVED IN TURNOVER

  UIC   20642              SHIP NAME   SSN 687 RICHARD RUSSELL

         MEDIAN AGE        MEDIAN LCS       MEDIAN AFQT      MEDIAN  EDUCATION
TIME    REPORT  DEPART   REPORT DEPART    REPORT  DEPART    REPORT  DEPART
 801     21.50   23.63     2.50   3.96     71.00   68.00     12.00   12.00
 802     20.50   22.67     1.67   5.33     69.00   73.00     12.00   12.00
 803     22.58   21.79     2.50   3.04     78.00   73.00     12.00   12.00
 804     21.17   23.00     2.17   4.75     71.00   75.00     12.00   12.00
 811     22.21   23.58     3.54   4.58     75.50   79.00     12.00   12.00
 812     22.42   25.00     3.29   5.17     81.50   73.00     12.00   12.00
 813     22.92   22.75     3.88   2.67     76.50   60.00     12.00   12.00
 814     21.50   25.42     2.50   6.33     65.00   75.00     12.00   12.00
 821     23.50   25.29     3.00   5.42     84.00   81.50     12.00   12.00
 822     22.83   24.21     3.08   4.63     80.50   69.00     12.00   12.00


          MEAN AGE         MEAN LOS          MEAN AFQT        MEAN  EDUCATION
TIME    REPORT  DEPART   REPORT DEPART    REPORT  DEPART    REPORT  DEPART
 801     23.42   24.77     4.49   4.98     68.87   69.83     12.00   12.29
 802     21.60   24.93     2.71   6.04     70.69   64.47     12.08   11.84
 803     24.77   23.53     5.68   4.35     70.65   68.40     12.00   11.85
 804     23.88   25.57     4.06   6.23     67.60   76.89     12.07   12.16
 811     22.40   24.86     3.63   5.88     73.43   76.52     11.79   11.76
 812     23.02   25.69     4.07   5.84     76.33   70.50     12.00   12.08
 813     24.08   23.02     3.98   3.74     75.50   65.48     12.25   11.62
 814     25.61   26.82     6.44   7.86     64.26   72.50     11.95   12.21
 821     23.61   25.67     3.74   5.97     75.44   75.45     12.11   12.32
 822     24.03   24.94     4.21   5.73     75.00   66.21     12.38   11.94
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           COMPARATIVE STATISTICS OF PERSONNEL INVOLVED IN TURNOVER

    UIC    52198               SHIP NAME  DD 938 JONAS INGRAM

            MEDIAN AGE        MEDIAN LOS        MEDIAN AFQT       MEDIAN EDUCATION
  TIME     REPORT  DEPART    REPORT DEPART     REPORT  DEPART    REPORT   DEPART
   801      20.50   23.67     1.58    3.79      58.00   62.00     12.00    12.00
   802      21.29   24.42     1.88    4.25      59.00   69.00     12.00    12.00
   803      21.00   22.92     2.54    3.17      60.00   70.00     12.00    12.00
   804      22.67   22.58     3.29    3.33      55.50   58.00     12.00    12.00
   811      21.46   22.92     1.71    3.00      58.00   54.00     12.00    12.00
   812      22.08   22.63     2.58    3.21      62.00   58.00     12.00    12.00
   813      21.92   23.08     1.46    4.29      54.00   66.00     12.00    12.00
   814      22.42   22.67     2.58    3.13      53.00   64.00     12.00    12.00
   821      21.58   22.92     2.67    3.50      58.00   58.00     12.00    12.00
   822      21.42   23.58     1.83    3.92      56.00   65.00     12.00    12.00


             MEAN AGE          MEAN LOS          MEAN AFQT        MEAN EDUCATION
  TIME     REPORT  DEPART    REPORT DEPART     REPORT  DEPART    REPORT   DEPART
   801      23.07   24.20     3.52    4.98      58.16   60.10     12.08    11.82
   802      22.34   25.78     2.82    6.42      61.75   65.25     11.64    11.85
   803      24.19   24.77     4.52    5.13      61.06   67.33     11.62    11.63
   804      24.89   24.36     5.09    4.38      51.88   57.36     11.85    11.73
   811      23.32   24.01     3.24    4.47      58.20   58.67     11.69    12.02
   812      23.82   23.39     3.83    3.88      63.34   59.50     11.59    11.65
   813      23.35   25.16     3.33    5.78      50.93   61.65     11.64    11.75
   814      24.33   25.39     3.92    5.04      53.40   62.44     12.03    11.76
   821      23.37   25.21     3.58    4.86      56.39   57.67     11.55    11.97
   822      23.44   25.12     3.46    5.42      56.35   62.06     11.75    11.66
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            COMPARATIVE STATISTICS OF PERSONNEL INVOLVED IN TURNOVER

       UIC    52234                  SHIP NAME  DDG 40 COONTZ

                MEDIAN AGE         MEDIAN LOS          MEDIAN AFQT         MEDIAN EDUCATION
      TIME     REPORT  DEPART     REPORT DEPART       REPORT  DEPART      REPORT   DEPART
       801      20.92   22.29      1.79    3.29        58.50   50.50       12.00    12.00
       802      20.88   22.58      1.17    3.83        63.00   67.00       12.00    12.00
       803      20.96   22.00      1.54    3.00        56.50   60.00       12.00    12.00
       804      21.00   23.38      1.67    3.71        56.00   65.50       12.00    12.00
       811      22.00   22.67      0.83    3.75        54.00   59.00       12.00    12.00
       812      22.08   23.42      2.00    3.88        58.00   59.00       12.00    12.00
       813      22.08   24.13      1.67    3.88        69.00   61.00       12.00    12.00
       814      22.33   23.04      1.33    3.63        58.50   60.00       12.00    12.00
       821      21.17   23.83      1.17    3.67        63.00   64.00       12.00    12.00
       822      22.75   22.58      2.75    3.75        49.00   58.00       12.00    12.00


                 MEAN AGE           MEAN LOS            MEAN AFQT          MEAN EDUCATION
      TIME     REPORT  DEPART     REPORT DEPART       REPORT  DEPART      REPORT   DEPART
       801      23.40   24.46      3.48    4.66        56.34   53.18       11.86    11.68
       802      22.08   24.56      3.10    4.94        64.62   64.64       11.76    11.95
       803      22.77   23.61      3.61    4.16        58.70   61.36       11.45    11.90
       804      23.05   24.33      3.31    4.32        55.94   63.71       11.61    11.81
       811      23.12   23.80      2.47    4.49        53.90   61.54       12.00    11.69
       812      24.40   25.07      4.13    5.05        58.61   60.66       11.86    11.83
       813      24.15   26.02      4.39    5.59        62.76   60.30       11.76    11.75
       814      23.59   25.17      3.20    5.18        58.21   59.00       11.79    11.82
       821      23.52   24.80      3.57    5.11        60.17   65.22       11.94    11.70
       822      25.46   24.86      4.83    5.39        48.16   60.30       11.72    11.74
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            COMPARATIVE STATISTICS CF PERSONNEL INVOLVED IN TURNOVER

    UIC    52686                  SHIP NAME  DDG 46 PREBLE

              MEDIAN AGE          MEDIAN LOS          MEDIAN AFQT        MEDIAN EDUCATION
   TIME    REPORT   DEPART     REPORT DEPART       REPORT   DEPART      REPORT   DEPART
    801     22.00    22.25      2.25    3.17        64.00    60.00       12.00    12.00
    802     21.63    22.17      2.33    3.17        57.50    64.00       12.00    12.00
    803     23.13    22.50      3.17    3.17        56.00    56.00       12.00    12.00
    804     21.25    23.33      2.50    4.08        60.00    57.00       12.00    12.00
    811     22.50    22.58      3.42    3.50        67.00    55.00       12.00    12.00
    812     20.38    22.17      1.29    3.00        59.00    70.00       12.00    12.00
    813     21.92    23.13      1.33    3.50        55.00    56.00       12.00    12.00
    814     22.50    22.75      1.83    4.25        62.00    62.00       12.00    12.00
    821     21.17    23.33      0.92    3.75        50.00    55.00       12.00    12.00
    822     20.50    23.25      1.21    3.33        56.00    67.00       12.00    12.00


               MEAN AGE            MEAN LOS             MEAN AFQT         MEAN EDUCATION
   TIME    REPORT   DEPART     REPORT DEPART       REPORT   DEPART      REPORT   DEPART
    801     23.39    23.28      3.11    4.09        61.33    60.11       12.11    11.62
    802     23.63    24.76      4.40    5.17        59.52    60.30       11.91    11.85
    803     24.72    24.81      5.16    4.87        49.92    57.37       11.64    11.89
    804     23.15    25.77      3.75    6.27        56.34    56.81       11.68    11.98
    811     24.83    24.36      5.50    4.78        66.69    57.81       11.97    12.02
    812     21.74    24.17      2.28    4.59        58.26    65.56       11.66    11.94
    813     22.94    23.60      2.71    4.27        59.15    56.24       11.76    11.76
    814     25.12    24.55      4.72    5.02        62.76    62.40       12.12    11.83
    821     22.84    24.10      2.81    5.22        51.87    60.16       11.87    11.93
    822     23.52    25.22      3.87    5.42        54.32    67.34       12.00    11.90
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          COMPARATIVE STATISTICS OF PERSONNEL INVOLVED IN TURNOVER

      UIC    52699               SHIP NAME   CG 24 REEVES

               MEDIAN AGE         MEDIAN LOS          MEDIAN AFQT        MEDIAN EDUCATION
    TIME     REPORT  DEPART     REPORT DEPART       REPORT   DEPART     REPORT   DEPART
     801      22.42   23.42      2.67    3.13        58.00    59.50      12.00    12.00
     802      20.71   22.38      1.13    2.96        49.50    61.00      12.00    12.00
     803      20.96   23.67      1.00    3.71        64.00    63.00      12.00    12.00
     804      22.83   23.04      2.92    3.33        58.00    60.00      12.00    12.00
     811      20.50   22.54      0.83    3.25        54.00    60.00      12.00    12.00
     812      20.83   22.71      1.71    2.96        65.00    64.50      12.00    12.00
     813      22.38   22.50      2.04    3.50        63.00    70.00      12.00    12.00
     814      23.25   23.13      2.25    3.75        60.00    64.50      12.00    12.00
     821      20.33   23.71      1.00    3.79        44.00    64.50      12.00    12.00
     822      22.33   23.75      3.08    4.33        56.00    56.00      12.00    12.00


                MEAN AGE           MEAN LOS            MEAN AFQT         MEAN EDUCATION
    TIME     REPORT  DEPART     REPORT DEPART       REPORT   DEPART     REPORT   DEPART
     801      24.41   25.30      4.75    5.65        56.96    63.00      11.72    11.76
     802      22.23   23.69      2.71    4.35        52.21    61.38      11.75    11.69
     803      22.79   25.51      2.64    5.64        64.71    60.71      11.88    11.73
     804      25.28   24.91      5.63    5.27        58.32    60.06      11.89    11.92
     811      22.03   23.60      2.41    4.09        53.00    61.80      11.80    11.32
     812      22.87   23.76      3.69    3.92        63.07    64.97      12.02    11.89
     813      24.40   24.01      4.47    4.25        56.19    67.02      11.94    11.82
     814      23.33   24.65      3.75    4.98        62.29    63.32      11.97    11.93
     821      22.41   24.96      3.25    5.41        48.63    63.50      11.71    11.87
     822      23.07   25.49      3.78    5.97        55.82    57.88      12.03    11.92
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            COMPARATIVE  STATISTICS  OF  PERSONNEL  INVOLVED  IN  TURNOVER

    UIC    5270C                 SHIP NAME   CGN 25 BAINBRIDGE

             MEDIAN AGE        MEDIAN LOS          MEDIAN AFQT       MEDIAN  EDUCATION
TIME       REPORT   DEPART    REPORT  DEPART     REPORT    DEPART     REPORT    DEPART
 801        22.75    24.00     3.17    4.25       70.00     71.00      12.00     12.00
 802        22.21    23.21     2.58    3.96       66.00     67.50      12.00     12.00
 803        21.50    23.25     2.17    3.25       72.50     69.00      12.00     12.00
 804        22.25    23.92     2.83    4.00       71.00     65.00      12.00     12.00
 811        21.83    23.58     2.17    4.29       62.00     65.00      12.00     12.00
 812        22.25    23.00     2.83    3.83       73.00     69.00      12.00     12.00
 813        21.92    23.83     1.92    3.67       67.00     65.00      12.00     12.00
 814        22.67    23.67     2.50    4.21       65.50     67.50      12.00     12.00
 821        22.25    23.17     2.50    4.17       59.00     65.00      12.00     12.00
 822        21.83    23.92     2.00    4.08       62.00     67.00      12.00     12.00


              MEAN AGE          MEAN LOS            MEAN AFQT        MEAN EDUCATION
TIME       REPORT   DEPART    REPORT  DEPART     REPORT    DEPART     REPORT    DEPART
 801        24.11    24.52     5.08    4.63       68.78     65.24      11.89     12.13
 802        23.96    24.17     4.35    4.70       63.82     64.84      12.09     11.87
 803        23.51    25.03     3.48    5.03       67.43     66.80      11.98     12.17
 804        23.76    25.70     4.18    6.06       71.35     63.46      11.84     11.84
 811        22.90    25.04     2.53    4.95       62.16     62.59      12.03     11.90
 812        24.03    25.27     4.35    5.42       69.23     66.95      12.12     11.96
 813        22.69    25.19     3.23    4.89       67.22     63.26      12.11     11.75
 814        24.93    24.59     4.81    4.92       62.11     67.31      12.09     11.95
 821        23.68    24.30     4.25    4.75       58.45     64.11      11.90     11.93
 822        23.50    25.17     3.48    5.12       60.50     61.94      11.91     12.11
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COMPARATIVE STATISTICS OF PERSONNEL INVOLVED IN TURNOVER

UIC 54057 SHIP NAME FF 1062 WHIPPLE

	MEDIAN AGE		MEDIAN LOS		MEDIAN AFQT		MEDIAN EDUCATION	
TIME	REPORT	DEPART	REPORT	DEPART	REPORT	DEPART	REPORT	DEPART
801	24.25	22.33	2.79	3.58	52.00	65.00	12.00	12.00
802	20.75	22.92	1.25	3.08	57.50	63.00	12.00	12.00
803	20.08	21.83	1.25	2.83	58.00	60.00	12.00	12.00
804	21.08	23.83	2.17	4.00	64.00	55.00	12.00	12.00
811	21.25	22.46	2.08	3.04	60.00	56.00	12.00	12.00
812	21.83	22.42	1.67	3.67	50.00	65.00	12.00	12.00
813	21.46	23.75	1.79	4.33	53.00	70.00	12.00	12.00
814	23.33	23.46	3.08	3.92	56.50	71.00	12.00	12.00
821	20.96	23.25	0.92	3.46	64.00	58.00	12.00	12.00
822	21.63	23.58	1.79	4.50	58.00	60.00	12.00	12.00

	MEAN AGE		MEAN LOS		MEAN AFQT		MEAN EDUCATION	
TIME	REPORT	DEPART	REPORT	DEPART	REPORT	DEPART	REPORT	DEPART
801	25.48	24.27	5.21	5.39	50.70	64.82	11.75	11.64
802	22.72	24.63	3.28	4.71	58.18	61.72	11.73	11.89
803	21.71	23.46	3.05	3.89	58.36	60.47	11.76	11.86
804	24.39	25.79	4.37	5.93	64.65	55.69	11.91	11.98
811	23.65	24.33	3.41	4.62	60.96	56.62	12.07	11.91
812	23.98	23.71	3.97	4.61	58.67	61.27	11.74	11.67
813	24.30	25.26	4.12	5.32	51.00	68.65	12.09	12.00
814	24.94	25.17	5.08	5.13	58.38	66.26	11.88	12.05
821	22.46	25.06	2.59	5.57	58.58	59.88	11.75	11.88
822	23.48	26.20	3.91	6.26	53.55	57.85	11.84	11.74

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             COMPARATIVE  STATISTICS  OF  PERSONNEL  INVOLVED  IN  TURNOVER

      UIC    54064                   SHIP  NAME   FF 1069 BAGLEY

               MEDIAN AGE           MEDIAN LOS            MEDIAN AFQT         MEDIAN  EDUCATION
    TIME     REPORT   DEPART      REPORT DEPART         REPORT   DEPART      REPORT   DEPART
     801      22.38    22.67       3.17    3.42          58.00    62.00       12.00    12.00
     802      22.25    22.75       3.42    4.08          56.00    56.00       12.00    12.00
     803      22.75    22.25       1.00    3.08          65.00    64.00       12.00    12.00
     804      19.92    23.38       1.17    4.25          66.00    62.50       12.00    12.00
     811      22.08    23.67       2.75    4.42          59.00    69.00       12.00    12.00
     812      23.42    22.88       3.25    4.21          65.00    67.00       12.00    12.00
     813      21.83    23.25       1.25    4.17          59.00    62.00       12.00    12.00
     814      21.83    24.25       1.46    4.25          60.00    62.00       12.00    12.00
     821      22.00    23.50       3.08    4.17          60.00    60.00       12.00    12.00
     822      22.75    24.29       2.71    4.54          69.00    62.00       12.00    12.00


                MEAN AGE             MEAN LOS              MEAN AFQT          MEAN  EDUCATION
    TIME     REPORT   DEPART      REPORT DEPART         REPORT   DEPART      REPORT   DEPART
     801      24.52    24.65       5.59    5.02          59.45    58.23       11.70    11.81
     802      25.91    24.06       5.67    4.59          56.78    58.49       11.91    11.80
     803      24.38    24.18       3.13    4.45          66.67    61.12       11.93    11.82
     804      21.27    24.54       1.81    4.93          62.00    58.82       11.54    11.82
     811      24.69    25.28       3.66    5.74          62.27    63.95       11.77    11.93
     812      23.71    24.41       3.97    4.92          68.67    64.00       11.67    11.74
     813      22.78    24.18       2.61    4.30          54.93    62.12       12.10    11.95
     814      23.74    25.76       3.08    5.66          58.15    59.87       11.73    11.78
     821      23.48    24.98       4.17    5.03          60.13    59.82       11.81    11.86
     822      24.09    26.32       3.30    6.14          62.44    63.08       11.78    11.68
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BIBLIOGRAPHY

ALKOV, R.A., "Life Changes and Accident Behavior", *Approach*, February 1975.

Alkov, R.A., "Stress Coping and Aircraft Mishaps", *Approach*, September 1981.

Amendiola, J.A., "Training Management and Personnel Turbulence", Thesis, U.S. Army Command and General Staff College, June 1981.

Binkin, M. and Kyriakopoulos, I., *Youth or Experience? Manning the Modern Military*, The Brookings Institution, 1979.

Carlson, C.G., "A Descriptive Analysis of First Term Attrition From US Naval Ships", M.S. Thesis, Naval Postgraduate School, September 1981.

Cohen, J. and Cohen, P., *Applied Multiple Regresion/ Correlation Analysis for the Behavioral Sciences*, Lawerence Erlbaum Associates, 1975.

Consolidated Casualty Reporting System (CASREP) Reports Catalog, October 1978.

Dixon, W.J., and Brown, M.B. (Editors), *BMDP Biomedical Computer Programs P-Series*, University of California Press, 1979.

Fogec, T.G., "Predicting Employee Performance", *Personnel Journal*, June 1976, *vol 55* no 6.

Highsmith, R.C., "Proposed Measures of Effectiveness for Human Resource Availibility Periods and Their Impact upon Unit Operational Readiness", M.S. Thesis, Naval Postgraduate School, December 1976.

Horowitz, S.S. and Sherman, A., "Crew Characteristics and Ship Condition (Maintenance Personnel Effectiveness Study (MEPS)", Center for Naval Analysis, Report CNS 1090, March 1977.

Kendall, V.S., "Personnel Turbulence in the Air Weapons Controller Utilization Field: Problems or Platitudes", presentation, U.S. Army Command and General Staff College, June 1978.

Kerlinger, F.N. and Pedhazur, E.J., *Multiple Regression in Behavioral Research*, Holt, Rinehart and Winston Inc., 1973.

Larsen, O.A., et.al., "Survey of Unit Performance Effectiveness Measures", NPRDC Report TR 74-11, January 1974.

Marcus, A.J., "Personnel Characteristics and Navy Aviation Squadron Performance: A Production Function Approach", Center for Naval Analyses, Memorandum (CNA) 82-0565.10, July 1982.

Namboodiri, N.K., Carter, L.F. and Blalock, H.M., Applied Multivariate Analysis and Experimental Designs, McGraw Hill,

SAS User's Guide 1979 Edition, SAS Institute Inc., 1979.

Swenson, T.G., "Theoretical Understanding of Recruiting Source Consequences", Ph.D. Dissertation, University of Oregon, 1982.

"The Enlisted Survival Tracking File", NPRDC Report TN 81-11, April 1981.

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